CHEVROLET

1936 ENGINEERING FEATURES

Master & Standard Passenger Cars & Trucks

CHP-463638

CHEVROLET MOTOR COMPANY
DETROIT, MICHIGAN

GENERAL MOTORS BUILDING

August 20, 1935

Mr. [signature]

Dear Sir:

This book, "Chevrolet 1936 Engineering Features", is compiled by the Chevrolet Engineering Department, so that you and other authorized persons within our organization may have advance information concerning the features of our new passenger cars and trucks.

In this book, we describe in detail only those features which are new for 1936 or were added late in the 1935 season. These data were compiled somewhat in advance of production and are correct at this date. We will make no subsequent changes in this book. Complete specifications will be available later in different form.

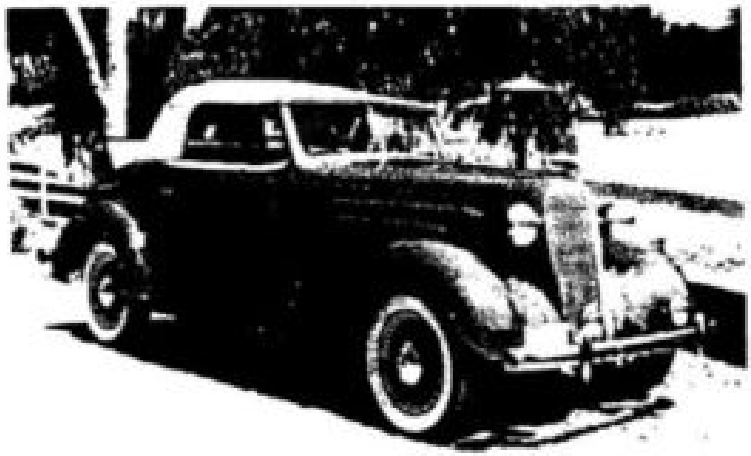
This copy, number 342, is issued to you and is intended for your use only. Please regard all information contained herein as strictly confidential and not to be published.

Yours very truly,

[signature]

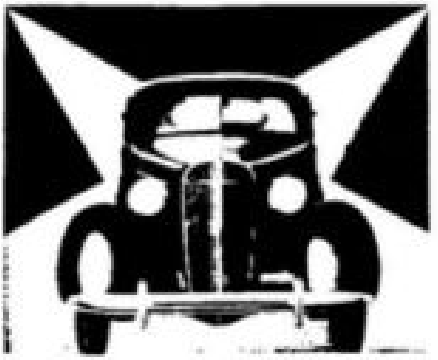
CHIEF ENGINEER

CHEVROLET



1936 Chevrolet, convertible coupe. OCW

1936



CHEVROLET 1936 ENGINEERING FEATURES

MASTER PASSENGER CARS

INTRODUCTION

The Chevrolet MASTER line of passenger cars, which proved so popular during the 1935 season, is continued with many improvements for 1936, with the same choice of body types.

The appearance of these cars is greatly enhanced by a new styling of the front end, which creates an entirely new and individual car character, even more in harmony with the "Turret-Top" bodies by Fisher.

In all body types, the front doors are hinged at the front, as an added safety measure. Increased comfort is provided by a new and more luxurious treatment of the body interiors. Hydraulic brakes of an advanced design, with separate mechanical emergency brakes at the rear wheels, provide better deceleration.

In the engine, a higher compression ratio, with a new "balanced" carburetor, increases fuel economy. Full-length water jacketing of the cylinder bores results in lower oil temperatures at all speeds, increasing oil economy and the life of the engine.

In addition to these features, many other improvements are made throughout the car. The following list of features provides a complete summary of the various improvements of the 1936 MASTER Chevrolets. The Progress Chart on page 3 shows how progressively the Chevrolet MASTER models have been improved since 1929.

NEW FEATURES IN THE 1936 MASTER MODEL

BRAKES
Hydraulic brakes.
Reduced brake pedal pressures.
Easier brake adjustment.
One-piece brake shoes.
Composite cast iron and steel brake drums.
Quicker heat dissipation from linings.
Rigid brake main cylinder and pedal mounting to frame.
Hydraulic stop lamp switch.
Separate mechanical hand brake system, with cable control to rear wheels.

FRONT SUSPENSION
Stronger attachment of spindle to wheel support arm on Knee-action model.
Tapered spring leaf ends on Conventional model.

ENGINE
Higher compression ratio.
Increased fuel economy.
Faster acceleration.
"Balanced" carburetor.
New valve timing.
"Round-nose" camshaft.
Greater durability of valve train.
Water jackets extend full length of cylinder bores.
Improved cooling of cylinder walls.
Lower oil temperatures.
More rigid crankcase.
Greater durability of engine parts.
Rifle-drilled oil passage in crankcase.
Baffle added at crankcase ventilator.
Increased oil economy.
Improved oil pump drive mechanism.
Counterbored exhaust valve guides.
Increased durability of flywheel ring gear.

CLUTCH
"Shot-blasted" disc cushion springs.
More accurate release lever alignment.

CHEVROLET 1936 ENGINEERING FEATURES · · · MASTER PASSENGER CARS

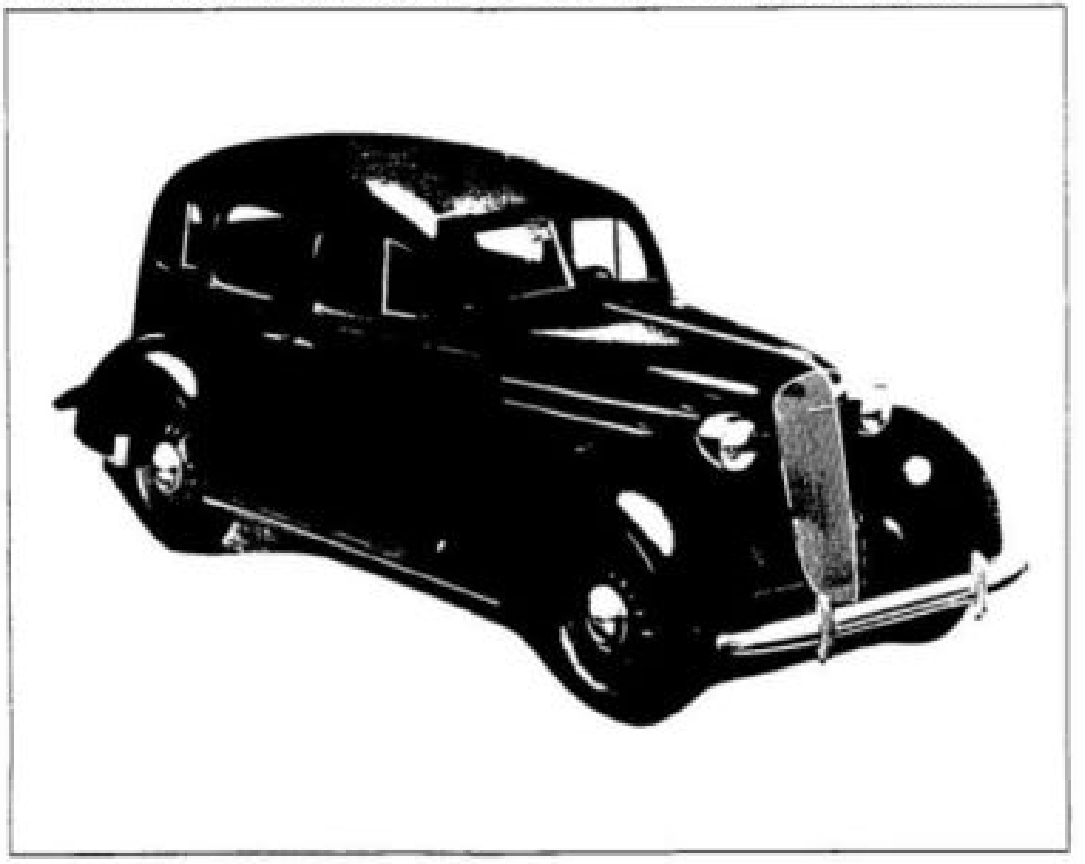
SHEET METAL
New, more attractive frontal appearance.
New streamlined radiator grille, narrower, and higher in radiator shell.
Smart moulding treatment on grille, hood hinge, and louvres.
New modernistic radiator ornament.
Heater radiator shell contour.
Headlamps mounted at sides of radiator shell.
Longer, more streamlined headlamps.
"Cronodine" processed fenders and running boards.

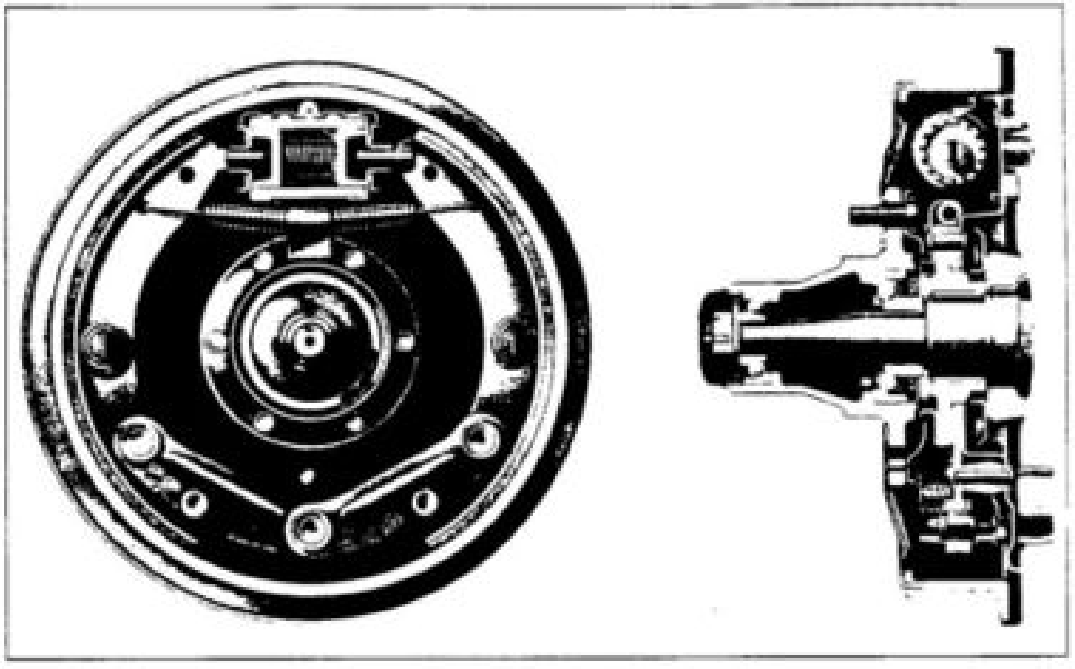
INSTRUMENTS
New two-tone instrument panel finish.
New instrument and control button finish to match panel.
More attractive instrument panel plate.

ELECTRICAL
Trunk sedan tail lamps mounted on fenders.

BODIES
Front door hinges at front on all types.
More comfortable seat cushions.
Split-back, full-length front seat on Coach and Town Sedan.
More luxurious upholstery with new pleating.
More attractive hardware.
New window and windshield moulding treatment.
Cloth-covered sun visor.

SPECIAL EQUIPMENT
New radiator ornament.
Radio speaker mounted above windshield.
Radio controls on new plate.
Head lamp beam indicator added.
Electric fan windshield defroster added.
Heater visor vanity mirror.
Insect screen for front ventipanes added.
Oil temperature regulator.
More rigid fender well wheel carrier.
More theft-resistant spare wheel lock.





BRAKES

The brakes of the Chevrolet 1936 MASTER and STANDARD passenger cars and the HALF TON trucks incorporate the same fundamental design that has been so successful in the past.

Their means of application, however, is entirely new- hydraulic pressure being substituted for mechanical linkage from the foot pedal to the brake shoes themselves. The emergency brake continues to be mechanically operated- rods and cables connecting the hand lever to the service brake shoes of the rear wheels.

While the fundamental principles of brake design are unchanged, certain details of the mechanism within the brake drums are revised, because of the change from mechanical to hydraulic application. In making this revision, all of the sterling qualities for which Chevrolet brakes are noted are retained and improved so that, for 1936, the deceleration is even better than in the 1935 models. The deceleration is more responsive, as the force of application at the pedal pad is much lower; pedal fade-out in consecutive high speed stops is reduced to a minimum; the brakes are much easier to adjust and the replacement of parts is simplified.

To accomplish these improvements without excessive cost, Chevrolet engineers designed the braking systems of the above models as nearly alike as possible, using identical parts in a great many places. Thus, by standardization, large volume production maintains the cost at a low level and permits the use of even better materials.

For purposes of simplification, the MASTER passenger car braking system is herewith described in detail. The braking systems of the STANDARD passenger car and the HALF TON truck are described later in comparison with this system.

BRAKE SHOES

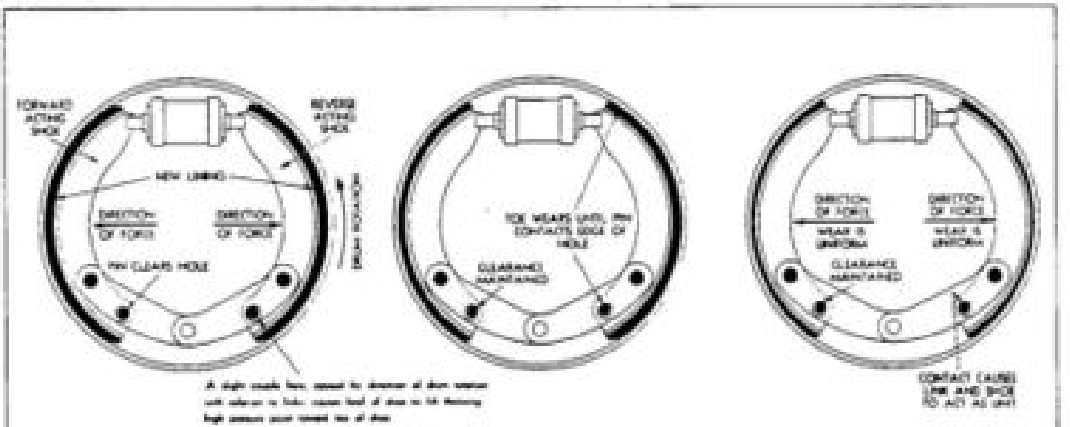
The brake shoes are revolved 90 degrees from their former position, due to the necessity of locating the hydraulic wheel cylinders at the upper centerline of the backing plates- this location being selected on account of the necessity of bleeding the lines. This change in position of the shoes necessitated increased friction at the articulated links and the elimination of the guides in favor of tension springs. These keep the edge of each shoe against three small projections from the flange plate, with the result that the brake shoes are kept in perfect alignment, as well as being

properly supported against sagging.

In each brake, two shoes, hinging on double articulated links from a common pivot at the bottom of the brake, provide forward and reverse braking in the same manner as heretofore. These shoes are identical and are new in construction. They are made from "T" section steel in which the flange and web are rolled from one bar, instead of being welded together, as before. With this construction, the shoes are light and rigid and dissipate heat more quickly from the linings, thus increasing their life. After the lining is applied, the shoe assembly is ground and burnished to make certain that the lining will fit the drum correctly upon brake application.

ARTICULATION

The links which support the shoes are strong and rigid, to insure accuracy of shoe movement. A link is provided on each side of each shoe. All four links pivot on a large diameter pin from the same point on the brake shoe anchor plate which is redesigned for greater strength, thus assuring a more firm support. Pins also form the connection at each shoe.



STAGES OF LINING WEAR ON FORWARD BRAKING

Both the forward and reverse shoes and their links are articulated, as heretofore, to permit the shoes to adjust themselves into the brake drum. Articulation is movement permitted by joints. In the human body, the arms and legs are articulated; that is, the joints at the shoulders, elbows and wrists permit the arms to articulate, while the joints at the hips, knees and ankles permit movement of the legs.

Articulation of a brake shoe and its links is the movement permitted by the two joints of the articulating links, the joint at the shoe and the joint at the anchor pin. Upon braking, this double joint effect permits the shoe to be carried in the direction of the moving brake drum, so that its surface bears uniformly for its full length in the curvature of the drum. The articulation of both shoes and their links is limited in a manner similar to that of the 1935 reverse shoe. The limitation of the forward acting shoe is not functional, however, it merely being incorporated from the standpoint of shoe interchangeability. The limited articulation on the reverse shoe is for the purpose of preventing excessive toe wear due to the line of force exerted on this shoe during forward braking.

This is accomplished by the insertion of a pin through holes in both links and the heel of the shoe. The holes in the links are of slightly larger diameter than the pin to permit movement in the joint. A stiff compression spring under the head of the pin holds the links tightly against the shoe web.

On forward braking, each shoe and its links pivot at the anchor pin as a unit, due to the compression of this spring. The forward shoe is picked up by the revolving drum into which it then adjusts itself.

With the reverse shoe, however, the action is different, as it is applied against the rota-

tion of the drum. This tends to lift the heel of the shoe, so that the high pressure point on the shoe shifts toward the toe. Ordinarily, this would cause excessive wear at the toe. However, the pin in the heel of the shoe prevents it from lifting, resulting in uniform wear of the lining. The clearance hole around the pin permits just enough articulation to allow the shoe to adjust itself into the drum on reverse braking.

As soon as sufficient toe wear occurs to permit the shoe to ride against the pin, further articulation is prevented and the reverse shoe acts as a fixed shoe in forward braking.

BRAKE SHOE ACTUATION

Self-actuation is the movement which tends to throw the brake shoe into further engagement with its drum. The self-actuation of the forward brake shoe is greater when the brakes are applied going forward than that on the same shoe going in reverse. In the same manner, the reverse shoe has its greater self-actuation when the car is in reverse. In each case, the actuation is designed to give just the right amount without being excessive. Excessive self-actuation causes a sensitive brake, which gets beyond the control of the driver. The gain in self-actuation in Chevrolet brakes is enough, however, to materially reduce the pressure needed to operate the service or hand brake.

BRAKE SHOE RETRACTING SPRING

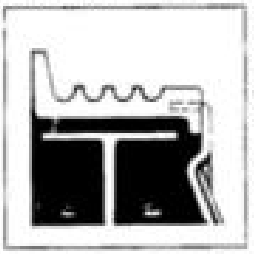
The same retracting spring which was used in 1935 interconnects the two shoes just below the wheel cylinder, pulling the shoe webs tightly into slots in the adjusting screws of their respective wheel cylinder pistons. It retracts the shoes from the drum when the brakes are released and also assists in preventing the shoes from rattling. A clip, spot-welded to the top of the brake shoe anchor plate, hooks over the center of the retracting spring to keep it in position. This causes it to exert its pull in the proper direction and to dampen any noise set up by the spring.

BRAKE SHOE GUIDE SPRINGS

At the center of each brake shoe, a conical coil spring, which takes the place of the former guide from the brake shoe anchor plate, is hooked through the web to an anchor welded to the brake flange, or backing, plate. This spring bears against the web to hold the inner edge of the shoe flange tightly against three small projections from the flange plate, thus keeping the shoe in perfect alignment with the drum and at the same time preventing it from rattling or vibrating. The edge of each brake shoe flange is coined to assure good contact with these projections.

BRAKE DRUM

The brake drums are of composite construction, each consisting of a cast iron rim of heavy section, cast integral with a pressed steel web. Many dovetails in the web flange are filled with the cast iron to insure a good bond between the two metals. The outer circumference of the drum is machined with four deep grooves to provide five parallel cooling ribs around the drum. The inside of the drum is machined after the wheel hub is assembled to assure absolute concentricity with its center and, therefore, perfect contact with the brake shoe linings.



The new composite brake drum combines the advantages of a cast iron braking surface with the light weight features of a pressed steel drum. In addition, the weight is distributed to better advantage, for it is concentrated in the rim and is utilized to dissipate heat. Cast iron is an ideal braking surface for, like the cast cylinders of an engine, it stands up under rubbing action and is a good conductor of heat. With its external ribs, which provide more cooling surface and with the new one-piece brake shoes, this further decreases scoring and lengthens the life of the linings. The advantages gained by the use of composite drums permit the reduction of the drum diameter from twelve to eleven inches and still provide greater braking efficiency than before. With this reduction, the effective wearing area of the brake linings is decreased from 172 square inches to 158 1/4.

The new composite brake drums are used on both the MASTER passenger cars and the HALF TON trucks to provide good deceleration with the new hydraulic brake application. The STANDARD passenger cars, being lighter in weight than these two models, are equipped with improved pressed steel drums of larger size than those of the 1935 STANDARD model.

BRAKE DRUM REMOVAL

Both front and rear brake drums are mounted on the outside of the hub flanges, instead of inside, as heretofore. The front drum is permanently attached to its hub by three rivets, while the rear drum is held to the outer end of the axle shaft by two screws. As heretofore, the wheel bolts are the major support of the drums, the new attachments being provided only to retain the drums in place upon removal of the wheels. In either case, removal for servicing the brakes is simple. The wheels are first removed. The front drum is then removed with its hub and the rear drum removed by unscrewing the two screws.

BRAKE FLANGE PLATES

The brake flange plates are of the same general design as before, but are smaller in diameter to fit the new brakes. They are relieved of the brake cam mechanism which they formerly supported and this, with their smaller size, increases their rigidity. The brake drum dirt shield is a full ring, instead of a split ring and is welded at four more places to the flange plate. As heretofore, the brake flange plate, with its wide outer flange, prevents water and mud from splashing into the brake. The dirt shield forms a gutter by which water and mud which might penetrate are drained out of the brake before it can affect its mechanism. This type of seal, which has been used with entire success for the past two years, insures long life and excellent operation of the mechanism. In tests at the General Motors Proving Grounds, cars with these brake seals have been driven for hundreds of miles over flooded, soft, gravel roads without any bad effect on the brake operation.

HYDRAULIC BRAKE APPLICATION

The hydraulic pressure which actuates the wheel cylinders of each brake operates according to the fundamental displacement law of hydraulics, which states that "pressure exerted upon a column of liquid is expended equally in all directions". By this means, equalized braking pressure is provided at all four wheels at all times when the brakes are applied, assuring that the car will maintain its course during the braking period.

This pressure is developed in a main cylinder by pedal movement and distributed equally through pipes and hoses to the four wheel cylinders. At the wheel cylinders, this hydraulic pressure is converted into movement which expands the shoes into their drums with equal pressure at each side of the car. At the same time, the shoe expansion pressure is proportioned at 52 1/2 percent on the front brakes and 47 1/2 percent on the rear. When movement of the brake fluid within the lines ceases at all four wheel cylinders and when all brake shoe clearances are taken up, the pedal pressure is converted into the necessary expansive force to apply the brakes. Due to the extremely short distances the pedal, fluid and shoes travel, equalized braking is accomplished almost instantaneously upon brake application. The main cylinders and all wheel cylinders and their interconnecting lines are filled with brake fluid, which is maintained at a constant volume by a reservoir incorporated in the main cylinder.

In designing the hydraulic system, a definite relation between the foot pressure at the brake pedal and the braking pressure at the wheels was determined. On the MASTER model, there is more car weight on the front wheels during the braking period than on the rear. For this reason, the above proportions of 52 1/2 percent to 47 1/2 percent were established by proportioning the sizes of the front and rear wheel cylinders in the same relation. At the same time, the cylinders were made large enough to prevent excessive pressure in the pipes and hoses. As a result, the front wheel cylinders are 1 1/4" in diameter, while the rear are 1 3/16". To provide the desired relation of the foot pressure at the brake pedal and the braking pressures at the above wheel cylinders, the main cylinder diameter was set at one inch.

WHEEL CYLINDERS

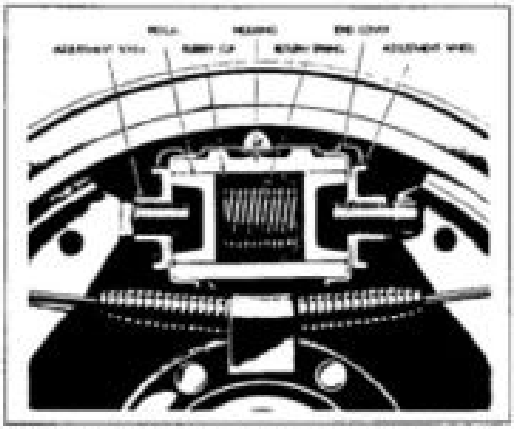
In each brake, the wheel cylinder is located on the vertical center at the top of the brake to facilitate the bleeding operation. It performs the same function hydraulically, when imparting equal pressure to the ends of both shoes, that the former mechanical device of the floating cam provided.

In the wheel cylinders, two sets of pistons, one for each brake shoe, are moved in opposite directions by hydraulic pressure to expand the shoes into the drum. The pistons operate in a large machined bore in a cylindrical cast iron housing attached to the brake flange plate by two bolts. A large pilot on the housing engages a corresponding hole in the plate. Two bosses projecting from the pilot are tapped, one for a bleeder valve and

the other for connection to the brake fluid pipe from the main cylinder.

Each set of pistons consists of a rubber cup, the piston proper, an end cover and an adjustment screw, located in the order named from the cylinder center.

The piston proper is an aluminum cup ground to a slip fit in the cylinder bore. The rubber cup at its inner end is moulded to fit tightly into the bore and acts as a seal to prevent the



escape of brake fluid past the system. The end cover is stamped in two cup-shaped pieces, which are welded together back to back. These two pieces are called the "cover-proper" and the "brake adjustment wheel".

The cover proper fits over the end of the cylinder housing on a machined pilot. It is fluted around its circumference, while the adjustment wheel has deep teeth formed in its flanged periphery. The center of the adjustment wheel is drawn into a long neck into which the adjustment screw is threaded. The adjustment screw extends to the brake shoe, a deep notch in its outer end permitting it to straddle the brake shoe web. At the center of the wheel cylinder, a light wire spring exerts pressure between the two sets of pistons, maintaining contact between their various component parts.

BRAKE SHOE ADJUSTMENT

Adjustment of the new brakes is extremely simple and easily accomplished. No special or complicated mechanism, not even a feeler gauge, is needed.

Each brake shoe is adjusted into the drum by turning its respective adjustment wheel to rotate the adjustment screw inward or outward, as necessary. The adjustment, when set, is maintained by a spring steel lever, which engages the flutes on the end cover.

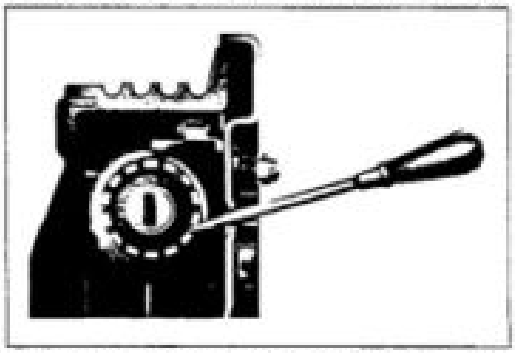
On all 1936 passenger cars and HALF TON trucks, with but one exception, access to the adjustment wheel at each brake is provided through two holes in the flange plate. These holes are spaced so that they align with the two adjustment wheels of the cylinder and are covered by removable spring steel covers. On the front brakes of the MASTER Knee-action model, a hole in the web of the brake drum permits adjustment. A simple cover of spring steel, hinged on the drum, snaps into this hole to prevent the entrance of dirt or water. In making the adjustment, a screw driver or other simple tool easily engages the teeth of the adjusting wheel through one of these holes.

MAIN CYLINDER

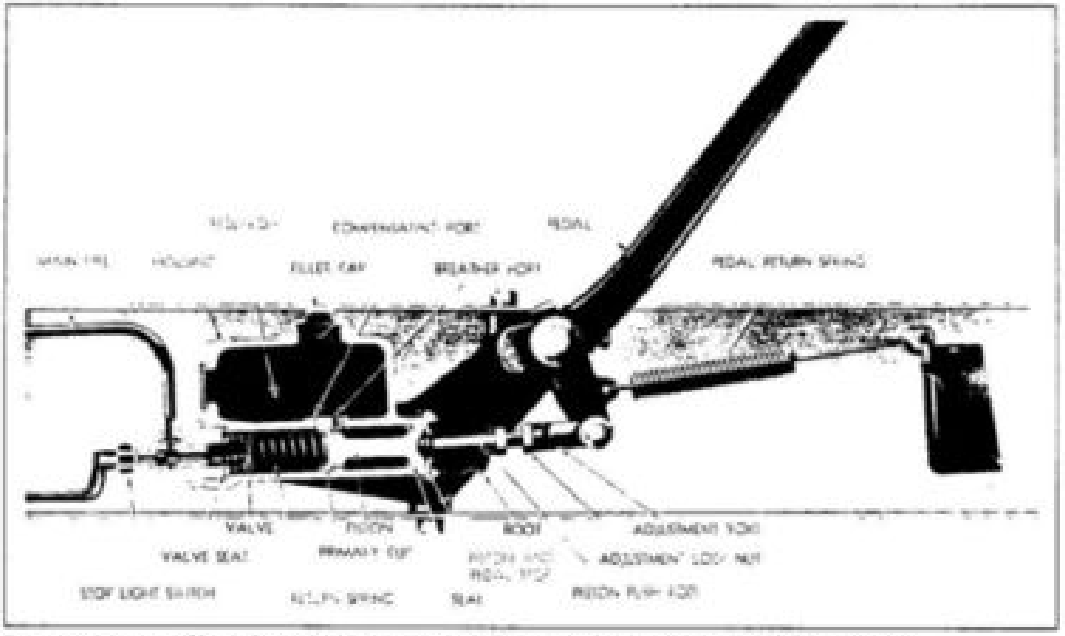
The main cylinder consists of a housing, piston, compensating valves and ports and a combined piston and pedal stop.

The housing is an iron casting incorporating a large reservoir for brake fluid and the cylinder in which the rest of the mechanism is contained. The reservoir is of ample size to assure a constant volume of fluid in the system at all times, regardless of expansion or contraction and without the necessity of frequent inspection and refilling. It is filled through a large hole at the top which is well sealed by a removable cap. Two drilled ports lead from this chamber to the cylinder. The large one is called a "breather port" and the small one a "compensating port".

The piston is a long, spool-like member with a rubber seal at one end and a rubber "primary" cup just ahead of the other end. This rubber cup is maintained in contact against the end of the piston by a light "return" spring. A combined outlet and return valve is held



against its seat by the same spring. This valve is of rubber encased in a steel cage.



Its seat is a rubber disc held in the end of the cylinder bore by a cap through which connection is made to the pipe line.

The combined piston and pedal stop is a steel disc held in the opposite end of the cylinder by a ring lock.

The piston push rod passes through this stop and is connected to a lever extension from the brake pedal. An adjustable yoke, which straddles the lever, forms the connection. The upset end of the piston rod contacts the pedal stop when the brakes are released. A rubber boot, which works like an accordion, encloses the rod and seals the end of the cylinder.

Movement of the pedal lever and push rod against the piston overcomes the return spring, permitting the piston and its cup to move toward the combined outlet and return valve. Hydraulic pressure through holes in the valve cage contracts the rubber valve and the fluid in the cylinder passes through the cage to apply its force on the fluid in the lines. When the brake is released, the return spring forces the piston and its cup to return. The force of the retracting springs in the brakes overcomes the force of the return spring, pushing the valve away from its seat. The fluid from the lines flows around the valve back into the chamber. Then the valve closes, retaining a slight pressure in the pipe lines and wheel cylinders to prevent the possible entrance of air into the system.

The return of the piston and its primary cup to released position is faster than the return of the fluid through the lines into the main cylinder. Because of this, a momentary vacuum is created in the main cylinder. This draws additional fluid from the reservoir through the breather port, through drilled holes in the piston end and past the lip of the primary cup. Any excess is returned to the reservoir through the compensating port. Thus, a full cylinder of fluid is assured for every brake application.

MAIN CYLINDER MOUNTING

The brake main cylinder is mounted to the frame with the brake and clutch pedals on a single rigid bracket which is fastened in the channel of the sub-frame left rail just below the toe board. This bracket is a thick-walled malleable iron casting bolted in four places to the sub-frame rail. Two of these bolts pass through the web of the rail and through the bracket into bosses in the side of the main cylinder. The other two bolts connect the bracket to the rail upper and lower flanges. Three strong bosses at the forward end of the bracket carry the pedal support shaft. They locate the pedals on the shaft, spacing them so that the brake pedal is directly in front of the main cylinder.

Both the brake and clutch pedals are redesigned to agree with the new mounting. A lever from the pivot hub of the brake pedal extends downward to form the connection to the main cylinder. This lever incorporates a hole through which the brake pedal return spring is connected, the other end of the spring being attached to the engine rear support.

The clutch pedal lever also is now forged integral with the pedal pivot hub, instead of being a separate part keyed to the hub. Due to the relocation of the pedal shaft, the control chain, which interconnects this lever to the clutch fork, is lengthened by the addition of a long link. Its increased length is an advantage in reducing angular loss and in producing a smoother operating pedal.

The clutch pedal travel is controlled by a rubber bumper contained in a retainer below the toe board. The shank of the pedal contacts this bumper when the clutch is released. The means of adjusting this pedal are the same as before, changed only to agree with the new mounting.

STOP LAMP SWITCH

Because of the new hydraulic braking system, a new stop lamp switch, operated by hydraulic pressure, is used. It is a simple, compact and very efficient unit which never requires adjustment. It consists of two terminals moulded in a block of bakelite; a metal diaphragm (the only moving part) which contacts the points of the terminals; a rubber disc which seals the diaphragm and contact points from the brake fluid; and, the housing in which these parts are encased.

The housing is a large hexagonal bolt in the head of which is the chamber for these parts. After they are inserted, the end of the housing is spun over to resist the hydraulic pressure and to protect the contact points from dirt and corrosion.

The shaft of the housing is pipe-threaded externally and drilled internally. By this means, the unit is screwed into the same connector at the rear of the brake main cylinder from which the brake main pipe leads. The seals of the unit are designed to withstand hydraulic pressure as high as 2500 pounds without leaking. When the brakes are applied, hydraulic pressure immediately overcomes the resistance of the diaphragm, which contacts the terminal points, causing instantaneous lighting of the stop lamp.

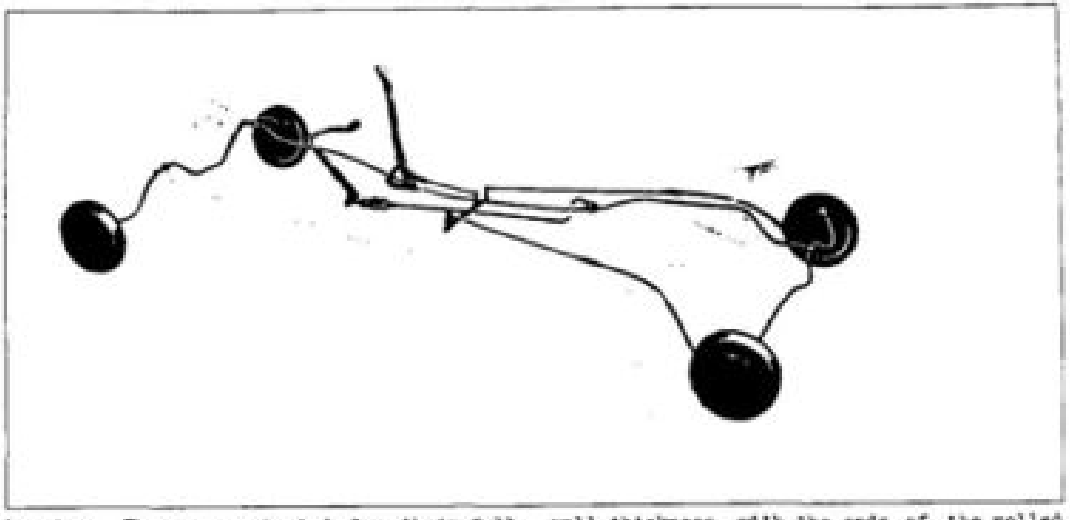
HYDRAULIC BRAKE PIPING

The hydraulic brake pipe system consists of a simple series of tubes and flexible hoses filled with fluid through which hydraulic pressure is transmitted to all four wheel cylinders. All tubing is well protected from injury by stones or other rubble thrown by the wheels. Wherever it is necessary for a tube to diverge from its protecting members for a short distance, an armor of closely wound, heavy steel wire is provided as a protection. At the few joints which are necessary in the system, secure and leak-proof connectors are used.

A single pipe leading from the main cylinder travels in the channel of the sub-frame left member to the end of the "FX" frame structure. Here it loops high over the propeller shaft to a "T" connector, solidly mounted inside the flanges of the second cross member right brace. Lines then branch in two directions from the "T", one going to the rear and one to the front.

The rear line travels inside the second cross member brace to a point near the right side rail and then to the rear, to a stamped steel bracket extending from the side rail just ahead of the kickup for the rear axle.

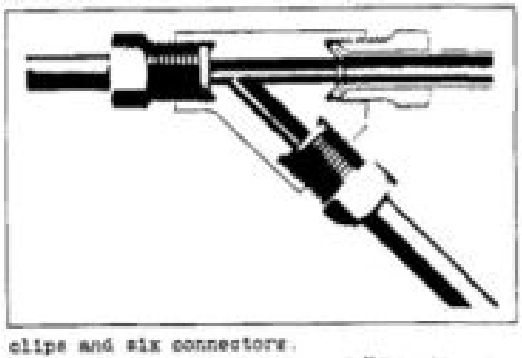
Through this support member, a connection is made to a flexible hose leading to a "T" coupling on top of the rear axle housing. Two tubes extend in opposite directions from this "T" to the rear wheel cylinders, being supported by a series of clips welded on the



housing. They are protected for their full length between the springs by the housing and from the housing to the wheel cylinders by wire armor.

The pipe line to the front wheel cylinders extends forward from the connecting "T" traveling inside the channel of the right sub-frame member to the front cross member. A connector, supported by the box section of the side rail at this point, provides a joint with a flexible hose leading to the right front wheel cylinder. Another pipe from this connector travels across the frame in the channel of the front cross member to join the hose to the left front wheel cylinder in an attachment through the left side rail.

There are only twenty-one feet of tubing in this system and this is supported in the frame members and on the rear axle by eleven sturdy



clips and six connectors.

All pipes are of steel tubing 1/4" in diameter with walls 1/32" thick. This tubing is formed of metal rolled (like a scroll) into a double wall thickness, with the ends of the rolled metal securely fastened together and sealed to prevent leaks. It is thoroughly plated on both outside and inside by tin or copper to prevent leaks and corrosion. Both ends of all pipes are flared at an angle of 45 degrees, with the lip of the flare bent inward to form a double thickness. A sleeve-like bolt of copper-plated steel, slipped over each end before it is flared, threads into the connector at each joint. This compresses the flared end onto a matching seat in the connector and precludes all possibility of leaks. All connectors are machined with great accuracy from close-grained, wrought brass bars. They are securely attached to strong members in locations where they are well protected.

BRAKE HOSE

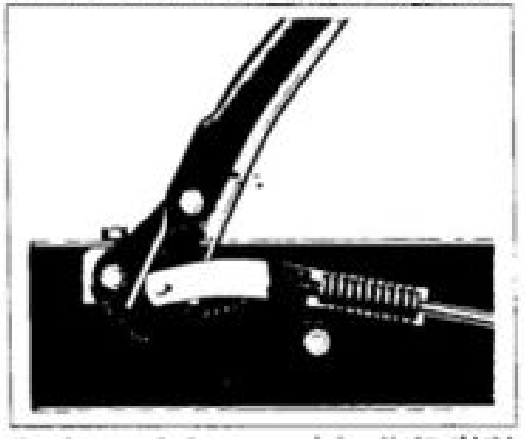
Three identical flexible hoses are used to connect the hydraulic piping to the front wheel cylinders and the lines leading to the rear cylinders. Each consists of a strong and durable hose, with connectors fitted at the ends in absolutely leak-proof joints. In this assembly, the hose is capable of withstanding hydraulic pressure up to 2500 pounds-over three times that required.

The hose is formed of rubber, moulded around and impregnating a fabric core. The connectors are of copper-plated steel. Each incorporates

a long cylinder in which the end of the hose is pressed. An integral core of the connector distends the walls of the hose, after which the cylinder is rolled into the walls, compressing them around the core to form a durable joint.

HAND BRAKE

The hand brake operates mechanically on the service brake shoes of the rear wheels. It is designed to provide twenty-five percent more travel than that of the service brakes, thus assuring safe braking at all times. The hand brake lever and its connection to the brake cross shaft are redesigned to obtain constant tension through the brake linkage upon engagement for parking. This tension compensates for the possible disengagement of



the shoes and drums caused by their slight contraction upon cooling.

The hand brake lever and its pull rod to the cross shaft are joined together through a pressed steel yoke, which straddles the lower end of the lever to which it is pinned. A heavy coil spring within the yoke bears against its bottom. The end of the pull rod passes through a clearance hole in the yoke bottom and through the center of the spring and is threaded into a square nut ahead of the spring. The nut is guided and prevented from turning by the walls of the yoke. The rod is adjusted far enough into the nut to provide a heavy load on the spring with the hand lever disengaged.

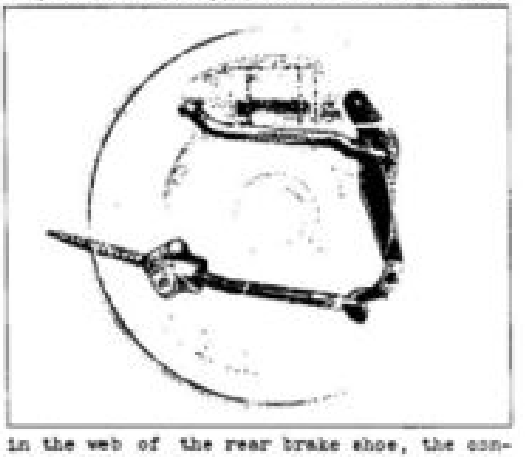
Upon engagement, the hand lever is pulled back, exerting extra tension in the spring. This enables the pawl to engage teeth in the sector beyond the necessary travel of the linkage for brake engagement. As the shoes and drum cool, the tension keeps the brakes engaged. The hand brake lever is longer and is reshaped to give more leverage to facilitate brake engagement.

The cross shaft, though simplified in design, is similar to that of the previous models. It is a steel bar supported below the frame sub-frame by two brackets, one to each sub-frame rail. Levers welded to each end of this bar are connected to pull rods extending toward the rear where, just ahead of the axle kickup, they are each joined to a sturdy steel cable which leads to the rear wheel.

A strong frame bracket at this juncture supports the cable to the frame side rail. The cable is very similar in design to that of the previous model and is protected in the same manner by a sheath of flexible wire armor. It is very strong, being capable of withstanding a tension of 1500 pounds without stripping or breaking.

The cable is inserted through a hole in the brake flange plate to which it is clamped by an integral retainer. Adequate seals provided at this point prevent the entrance of dirt or water.

Within the brake, a heavy stamped steel lever is pivoted at its upper end on a shoulder bolt



in the web of the rear brake shoe, the connection permitting free movement of the lever. The lever lower end is stamped in the form of a hook, which engages an eye in a forged end attached to the cable.

A notch is provided in the lever just below the attaching bolt at its upper end to form a connection to a rod which extends to the forward shoe. This rod is of large diameter steel and has a slotted end which straddles the main lever at the notch. Here a compres-

sion spring encircling the rod fits into the notch of the lever and bears against a shoulder on the rod. Its tension prevents excess movement of the joints and rattling. At the forward shoe, the rod is bent at a right angle, to pass through the shoe web to which it is connected and held in place by a cotter pin.

When the hand brake is applied, the toggle action of this leverage forces the brake shoes into contact with the drum. A spring on the cable bears against its anchor to the brake flange plate and against its end eye to return the lever to its normal position when the brakes are released.

COMPARATIVE SPECIFICATIONS

	1935	1936
Service brake type	4 wheel mechanical	4 wheel hydraulic
Hand brake type	4 wheel mechanical	2 wheel mechanical
Brake shoe construction	Two piece, face and web welded together	One piece, face and web integral
Brake shoe actuation	By cam turning on roller sector	By pistons in wheel cylinders
Limited articulation	Reverse shoes only	Forward and reverse shoes
Brake shoe guides	Guides from anchor plate straddle shoe web	Conical spring holds shoe edge against guides on brake flange plate
Brake drum construction	Pressed steel	Composite, cast iron and steel
Brake drum size	12"	11"
Brake drum thickness at lining center	3/16"	3/8"
Brake drum web thickness	3/16"	7/64"
Brake lining effective area	172 sq.in.	158 1/4 sq. in.
Brake drum mounting	Inside of hub flanges	Outside of hub flanges
Brake dirt shield	Split ring	Full ring
Brake dirt shield welds to flange plate	10	14
Brake flange plate diameter	14 5/16"	13 3/16"
Brake shoe adjustment	By turning brake cam	By turning adjusting wheels at wheel cylinders
Brake equalization	By mechanical adjustment	Automatic
Wheel adjustment holes - rear wheels	None	Two in brake flange plates - 1" x 5/16"
Wheel adjustment holes - front wheels	None	One in brake drums - 5/8" dia.
Braking pressure - front wheels	50%	52 1/2%
Braking pressure - rear wheels	50%	47 1/2%
Wheel cylinder size - front	None	1 1/4" dia.
Wheel cylinder size - rear	None	1 3/16" dia.
Brake main cylinder size	None	1" dia.
Brake main cylinder mounting	None	Integral with brake and clutch pedals
Service brake linkage adjustments	Five	One at pedal
Stop lamp switch operation	By mechanical leverage	By hydraulic pressure
Brake lines	Mechanical linkage	Pipes and hoses
Hand brake linkage	Mechanical "cut-in" on service brakes	Mechanical operating toggle linkage in two rear wheel brakes
Hand braking area	172 sq.in.	79 1/8 sq. in.
Hand brake lever length- pivot to end of grip	17 5/16"	19 13/16"
Hand brake cross shaft diameter	1 1/8"	1"

CHASSIS

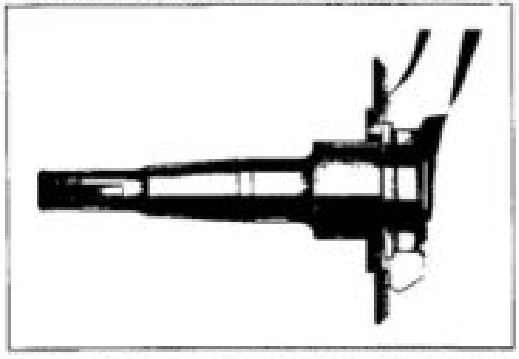
FRAME

The "YE" passenger car frame is continued for 1936 with few changes. These are due almost entirely to the adaptation of hydraulic brakes. They include the provision for the attachment of the main cylinder and brake tubes and connectors. Because of the new main cylinder and pedals mounting, the clearance holes in the gusset plates at the left side of the sub-frame at the dash are reshaped.

At each rear spring rear hanger, two short vertical ribs are pressed into the web of the side rail to stiffen the hanger attachment.

FRONT SUSPENSION

On the Knee-action model, the attachment of the front wheel spindles to their respective wheel support arms is entirely redesigned to provide increased strength at reduced cost. The method of joining the two pieces is much



stronger and more durable than the previous method in which these two parts were riveted together. The inner end of the spindle is formed into a pilot of large diameter, which is pressed tightly into a matching hole in the support arm. A shoulder around its body seats in a counterbore in the outer face of the arm, limiting the distance the spindle is pressed in. A heavy cylindrical lip at the spindle inner end is then peened entirely around the spindle into a countersink in the inner face of the arm.

The dust shield inner packing retainer at this connection, formerly held in position by the same rivets which held the spindle to the arm, is now welded at eight places to the outer face of the arm.

The front springs of the MASTER Conventional model are redesigned to decrease the unit pressure on the leaves and to reduce any tendency of the springs to squeak. This is accomplished by increasing the number of leaves from seven to eight and by tapering the thickness of the leaves for about four inches at each end. By this means, the number of contacts between spring leaves is increased and the stress is carried uniformly from leaf to leaf.

REAR AXLE

Due to the installation of hydraulic brakes, the rear axle housing flanges are reshaped, with four holes for the attaching rivets to the brake anchor and flange plates, instead of eight. These rivets are 1/16" larger in diameter. The faces of these flanges also are farther apart. On the rear axle shaft, the wheel flange is relocated 3/32" inboard, to provide for the new mounting of the brake drum outside of the flange.

EXHAUST SYSTEM

During the 1935 season, changes were made at the exhaust silencer and tail pipe supports to eliminate vibrations formerly set up in the frame and body by vibration of the engine exhaust gas. As these vibrations could be both felt and heard, their elimination provides more comfort for the car occupants. The grommet retainer at the silencer support was reshaped to exert less pressure on the rubber grommet insulating the support from its frame bracket. This allows the grommet to absorb more vibration.

At the tail pipe support, a new grommet, having twice as much rubber as before, also absorbs more vibration. This grommet is retained by a simple step bolt, instead of a stamped retainer.

COMPARATIVE SPECIFICATIONS

	1935	1936
FRONT SUSPENSION- Knee-action model		
Spindle attachment to wheel support arm	Four, 13/32" dia.rivets	Spindle pressed into arm and peened
Spindle pilot diameter	1"	2 1/4"

	1935	1936
FRONT SPRINGS- Conventional model		
Number of leaves	7	6
Total leaf thickness	1.69"	1.80"
Leaf end type	Curled	Tapered
REAR AXLE		
Distance between housing flanges	54 5/16"	55 3/32"
Housing flanges attachment	8 rivets,5/16" dia.	4 rivets,3/8" dia.

ENGINE

The engine of the 1936 MASTER Passenger cars performs better than any other engine Chevrolet has ever built. It is more economical, more durable and has more pulling power. These improvements are not the result of radical changes. The basic engine, with all its tried and proved features, remains the same. Refinements and further development thruout its structure produce these results.

The engine develops 30 horsepower at 1000 RPM, 60 horsepower at 2000 RPM and reaches its maximum peak of 79 horsepower, slightly below that of 1935,at 3200 RPM. This slight decrease has no effect on the speed of the car, as more power than necessary has always been provided by the Chevrolet engine. As heretofore, the power is governed to that needed to drive the car and to assure perfect car performance and long life. For 1936, the power is governed to produce the same maximum car speed as in 1935. For 1936, the torque is increased to provide more pulling power. The maximum torque of 156 foot pounds is developed through a speed range from 900 RPM to 2000 RPM.

The 1936 power and torque are shown in chart form on the next page. On this chart, also, are shown the power to drive the car and the brake mean effective pressure.

BMEP

The term "brake mean effective pressure", in engineering language, is both written and spoken as "BMEP". BMEP is the pressure developed by the engine per square inch of piston surface, or in other words, the actual work done per square inch of piston surface, regardless of the size or type of the engine. Because of this, BMEP is the most effective means for comparing the efficiency of two or more engines, just as the actual work accomplished by two different men is the most effective means for comparing their efficiency, regardless of their strength, size or race. It is particularly fitting that Chevrolet make known this comparative factor in efficiency, for the Chevrolet 1936 engine is the most efficient engine in passenger cars of the Chevrolet price class today.

The chart shows that the 1936 maximum BMEP of 114 pounds is maintained over the wide speed range from 900 to 2000 RPM. This is unusual. Usually the maximum may be from 1600 to 2000 RPM or from 800 to 1200.

The wide range thru which this maximum is maintained provides excellent lugging ability at the low speeds, great power for the high speeds, the necessary middle range reserve for cruising acceleration and the necessary punch for second gear traffic work.

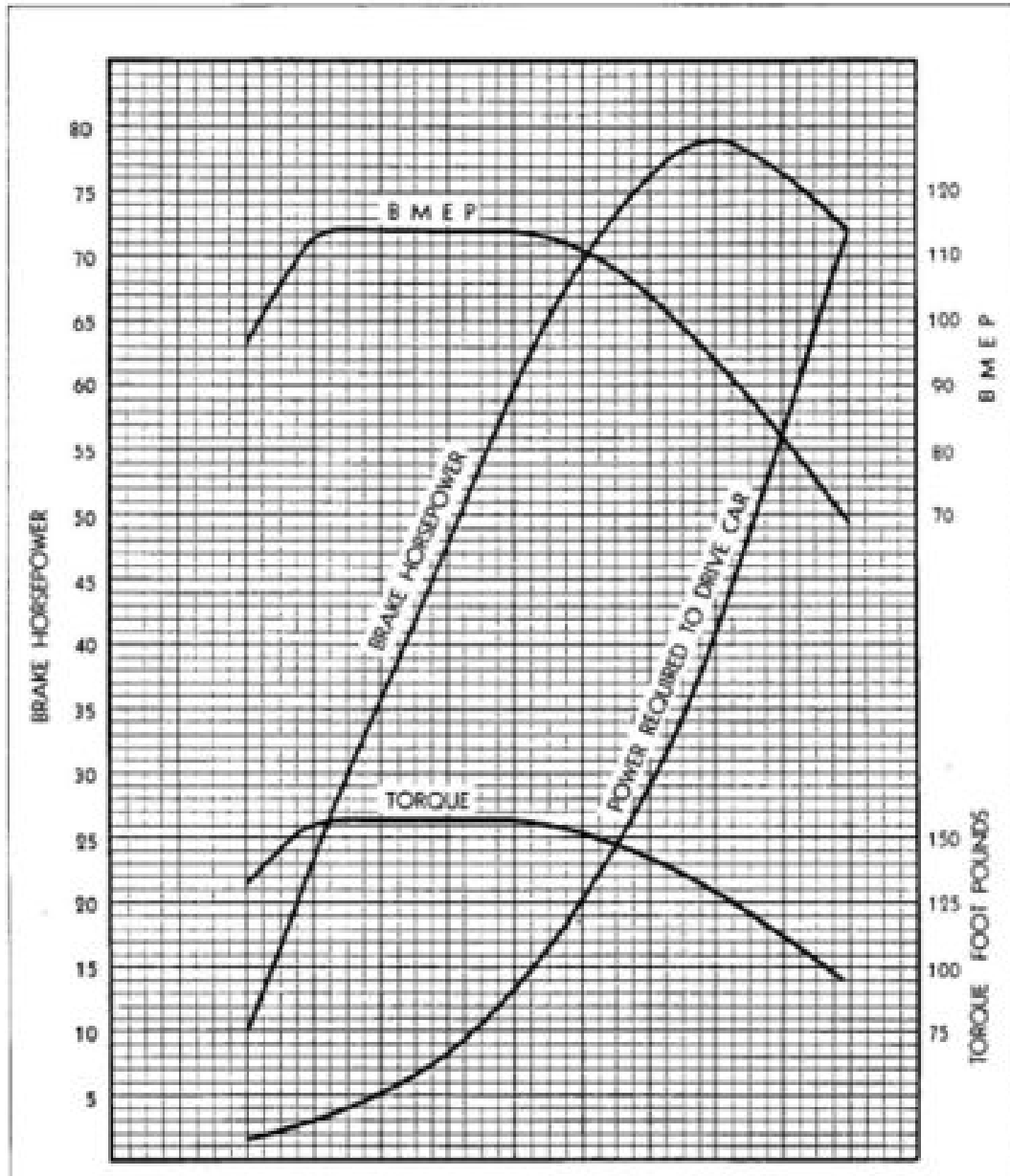
COMPRESSION RATIO

The compression ratio is increased to 6 to 1 from 5.6 to 1. With other engine refinements, this increases the fuel economy approximately six percent.

Gasoline contains more potential energy per pound than any explosive, but only about ten percent of this energy is normally used to drive any car; the remainder is wasted. The cooling system absorbs about forty percent of this waste and rejects it into the air; another forty percent is forced out of the cylinders with the exhaust gases; and, ten percent is used up in the friction of the pistons, bearings, gears and other rubbing parts of the car.

When an engine is designed, every effort is made to reduce wasted energy of the gasoline, so that more power is developed,or conversely, so that less fuel is used to develop a certain amount of power.

One way to increase fuel economy in any engine is to increase the compression ratio. The compression ratio is a term used to describe the extent of compression in the combustion chamber. It is the relation of the volume of the combustion chamber to the volume of the cylinder when the piston is at its lowest point. When the compression ratio is high, there is more room for pressure expansion in the cylinder, so that when the piston is at the bottom of its stroke and the exhaust valve



POWER AND TORQUE

opens to expel the gases, there is less pressure, or potential power, in the cylinder to be exhausted with the gases, than in a lower compression engine.

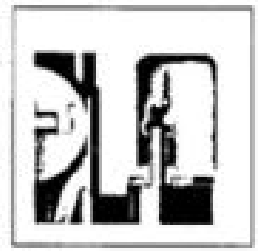
This is what happens in the 1936 CHEVROLET engine with its higher compression ratio:-Less usable power is lost and, for that reason, less fuel is needed to develop the power required to drive the car.

INLET MANIFOLD

A slightly smaller inlet manifold, incorporating all the features of the previous manifold, is used for 1936 to govern the high speed. This increases the velocity of the fuel mixture to the combustion chambers, causing the engine to warm up more quickly and improving the distribution of mixture between the chambers.

CARBURETOR

The carburetor is "balanced" and refined to further improve fuel economy and to make starting easier. The air pressure in the carburetor float chamber is balanced with that on the inside of the air horn on the atmospheric side of the choke. This is done by a system of passages in the carburetor and air horn, which allows communication between the air cleaner and the choke valve.



With this balanced pressure, the proportions of air and fuel in the fuel mixture delivered to the engine remain substantially the same at all times, even when the air flow is restricted by dirt. The new venting system also has the advantage of permitting the use of oil bath and other special air cleaners without necessitating change in the calibration. The needle valve and seat are redesigned, to prevent clogging by dirt particles and to withstand pressures twice as high as before. The air horn is retained to the carburetor body by three screws, instead of two. This makes a stronger anchorage, which is especially valuable when the large, heavy air cleaners, used in dusty atmosphere, are mounted upon it. Two holes at the idle port replace the former slot, which was apt to vary in shape, due to the method of punching. This makes the fuel consumption more uniform in all cars at speeds from fifteen to twenty-five miles per hour. The vacuum spark advance control is redesigned by relocating the communicating holes in the throttle shaft and carburetor body to improve the fuel economy at the higher driving speeds, from sixty to seventy miles per hour.

The choke valve of the carburetor is simplified by the removal of its latching mechanism, except for the spring which connects the two leaves of the valve. As there are fewer parts, the valve operates more easily. Thus, the choke control can be moved in or out with less resistance and manipulation is facilitated.

COMBUSTION CHAMBERS

The combustion chambers are reshaped to provide smooth combustion with the higher compression ratio. In the new design, conditions are greatly improved, as the new shape permits a complete separation of the intake ports and the walls of the chambers. This also prevents possible leaks at the valves, since the walls around the valves are more uniform in thickness. Because of the more uniform walls, valve seat temperatures are more uniform all around the valves and warpage of the seats is minimized.

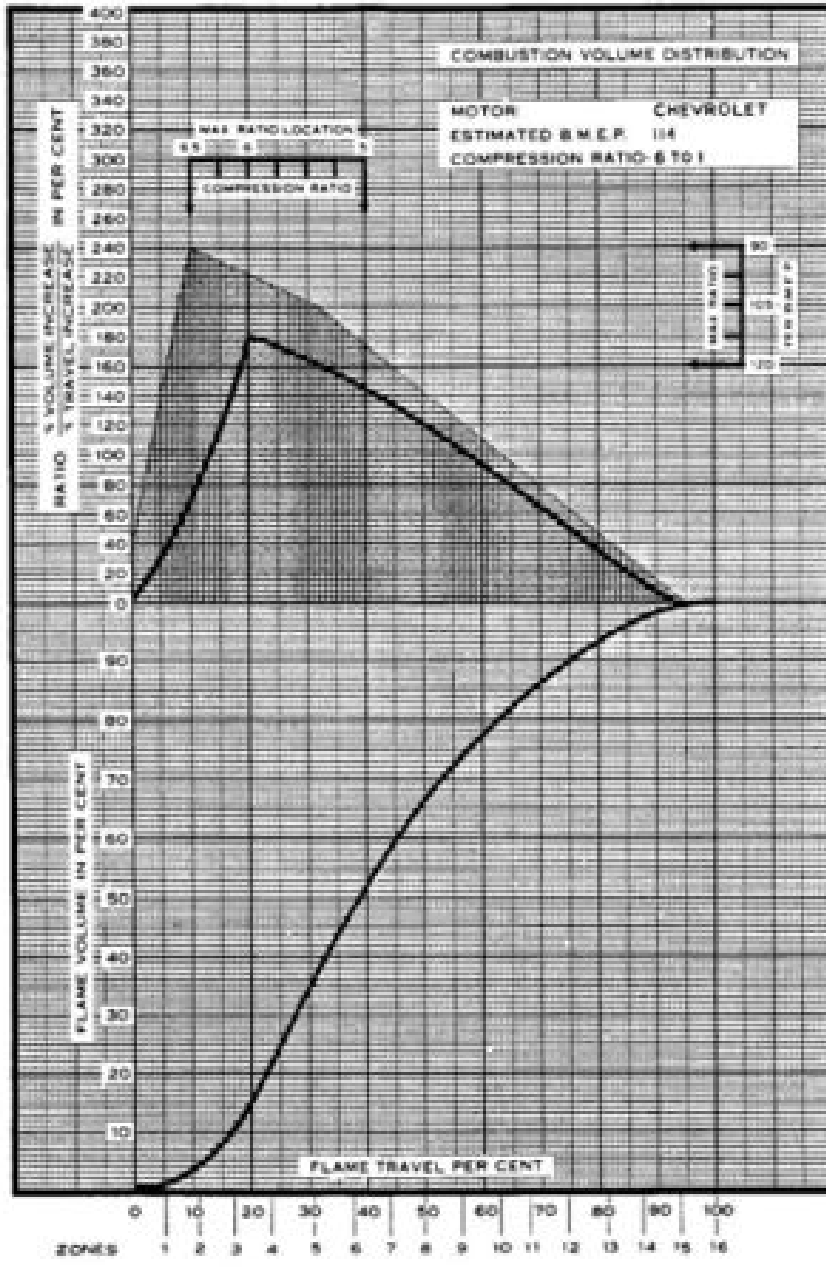
The new chambers are designed according to the "Blue Flame" principle, which was pioneered by Chevrolet several years ago.

COMBUSTION CHAMBER DESIGN

When the principle was originated, the mathematics involved in shaping the chamber were so complicated that a mechanical means of solution was sought in order that the work might be carried out with speed and accuracy. Recently this mechanical means was perfected and a definite procedure of design was arranged. This was followed rigorously in the development of the new chamber.

Before entering into a description of this mechanical set-up, it is necessary that the action in the chamber be described. Upon ignition of the fuel mixture, the resulting flame burns rapidly from the spark plug gap in all directions, building up ever-increasing pressure in the confined space of the combustion chamber until there is enough to cause the down stroke of the piston.

Before a chamber is designed, certain specifications are first decided upon. These are the compression ratio, the desired brake mean effective pressure and the locations of the


COMBUSTION VOLUME DISTRIBUTION
MOTOR CHEVROLET
ESTIMATED B.M.E.P. 114
COMPRESSION RATIO- 6 TO 1
MAX. RATIO LOCATION
COMPRESSION RATIO
RATIO % VOLUME INCREASE IN PER CENT % TRAVEL INCREASE
FLAME VOLUME IN PER CENT
FLAME TRAVEL PER CENT
ZONES

spark plug gap and the exhaust and inlet valves. A tentative chamber is then shaped to conform as closely as possible with the above specifications and a plaster model is made to that shape. This is where designing for combustion smoothness comes in. The model is cut by a special cutting machine into spherical segments or zones, which increase in volume from the spark plug gap as shown on page 17.

These zones represent the volume of fuel mixture burnt in the various stages of the flame travel. By careful measurement, their volume is determined in relation to the flame travel. The results of these measurements are then plotted on a chart. The presence of roughness in combustion and where it occurs is revealed in the resulting curves. The various segments are then reshaped and remeasured until the desired combustion smoothness is obtained.

The chart on page 16 shows the curves developed for the final design of the 1936 combustion chamber. The form upon which they are plotted was originated by Chevrolet and is the official form used in the development of the chamber. The lower portion shows the flame travel in relation to the volume of fuel mixture burnt. As an example, when the flame reaches the end of the third zone, it has completed seventeen percent of its total travel. The volume of the first three zones, representing the mixture burnt, is ten percent of the total volume of the chamber. The rate of pressure rise shown in the upper curve is the ratio of the distance the flame travels between zones to the volume of mixture burnt in that travel.

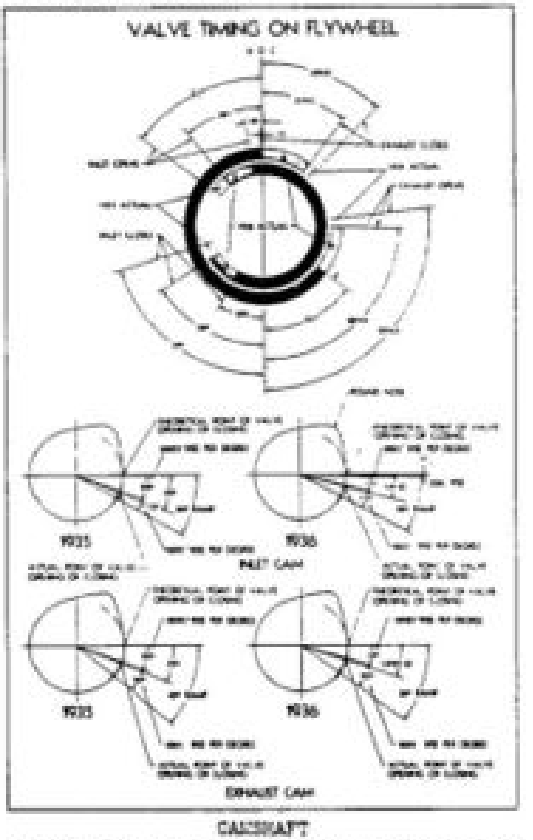
Thus the flame may burn through six percent of its total travel between the centers of zones numbers three and four, while in the same time, eleven percent of the total fuel mixture burns. In this case, the rate of pressure rise is 183 percent, which is plotted on the upper curve in relation to the total flame travel at the center of zone number four. The shaded portion behind the upper curve is a desired area in which to confine the pressure rise drive. It is developed from tests of hundreds of combustion chambers having smooth combustion characteristics, but used in engines with varied compression ratios and power. The indicators above the shaded portion denote the desired rapidity of pressure rise for chambers with various compression ratios, while the indicators at the right show the height of rise desired for various brake mean effective pressures.

When the combustion is smooth, the curve sweeps quickly up to the intersecting point denoted by the two indicators for the specified compression ratio and BMEP and then drops smoothly back.

IGNITION DISTRIBUTOR

Within the distributor, the automatic advance governor weight covers are reinforced to prevent loosening at high speeds of the pins which retain the weights.

The spark advance is changed to agree with the new engine characteristics caused by the higher compression ratio.



CAMSHAFT

The ramps of the inlet and exhaust cams on the camshaft are reshaped, so that in the actual valve timing, the inlet valve opens later and the exhaust valve closes sooner than heretofore. The resultant smaller overlap reduces the tendency of the fuel mixture blowing into the combustion chamber to blow back into the manifold. This improves the idling and provides more engine stability and power at the lower speeds. In the new design, only the

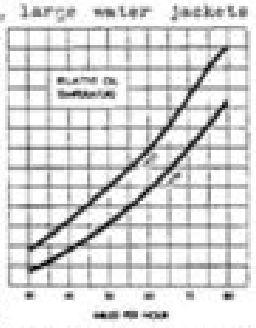
actual timing is affected, the theoretical timing remaining the same as heretofore.

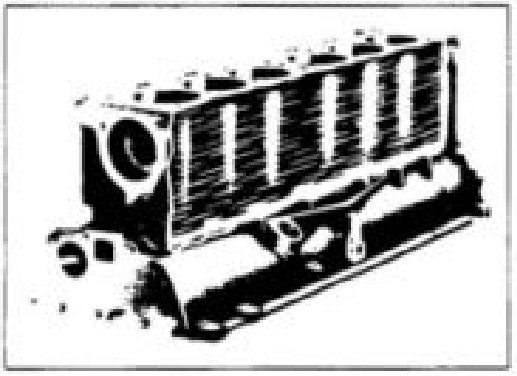
Every cam is designed with a ramp between its base circle and the cam proper, which lifts the tappet. This ramp, which is a slight and gradual increase from the base circle, provides smoothness in the lift, preventing the shock of a sudden rise of the tappet. While the tappet is in contact with the base circle, no lift occurs. As it contacts the ramp, it starts to rise very slowly, until all lash in the valve mechanism is taken up and the valve starts to open. This is the point of actual opening. It continues to rise slowly until it reaches the point where the ramp merges into the cam. At this point, the tappet starts to rise more rapidly, its lift accelerating until the tappet has reached the nose of the cam. The point where the tappet first starts to rise swiftly is called the theoretical point of valve opening.

A new "round nose" inlet cam contour causes the valve mechanism to operate more smoothly and quietly, providing faster and quieter acceleration when in second gear.

COOLING

In the cylinder block, large water jackets extend to the bottom of the bores, providing uniform cooling for their full length. With these full-length water jackets, engine operating conditions are ideal, even more perfect than before. The bores always remain truly round and straight; the piston rings are always in full contact with the walls; all moving parts -- pistons, rings and connecting rods, run cooler, with increased durability. In addition, the temperature of the oil, which is splashed on the cylinder walls is lowered, resulting in much lower temperature in the oil pan, as shown on the accompanying chart. Oil economy is increased and all moving parts operate more smoothly.





By the addition of the full-length water jackets and improved external ribbing, the cylinder block rigidity is increased twenty-five per-cent. The exterior of the block is simpler, neater, and easier to clean. The pipe leading

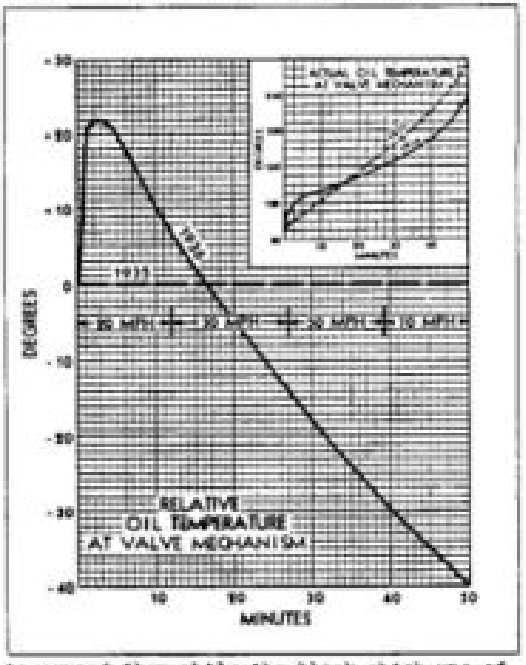
from the oil distributor to the valve rocker shaft now extends directly thru the water jacket at the center of the block. Adequate seals are provided in the walls thru which it passes, to prevent all possibility of leaking. An outstanding advantage provided by the full-length water jackets and the location of this pipe is the resulting balance of valve tappet clearance. Clearance at the valve tappet, of course, is essential and is very carefully worked out. It is desirable to maintain this clearance as nearly constant as possible. Variations in this clearance may occur during the warming up period, especially during winter. These variations occur because the cylinder block expands as the water heats up and the push rod expands as the oil heats up. The amount of block expansion depends upon the rate at which the water heats up. The amount of push rod expansion depends upon the rate at which the oil heats up.

In the 1935 engine, the water heated up much faster than the oil. The oil poured over the push rods tended to retard their expansion and, since the block expansion was rapid following the temperature rise of the water, the tendency was to "lift" the top of the block, which supports the cylinder head and rocker mechanism, away from the top of the push rod. Of course, as the oil was heated, the push rod expanded until the tappet clearance was stabilized. In the 1936 engine, due to the long water jackets and the fact that the rocker arm oil supply is passed thru the water jacket into the water by way of the copper pipe from the oil distributor, oil going to the rocker arms and push rods warms up much quicker than similar oil going to the 1935 push rods. On the accompanying chart, the heavy dotted line labeled 1935 is a base to show the improvement in the temperature of this oil, as indicated by the heavy full line labeled 1936.

The heavy full line indicates that in one minute of operation, the oil going to the push rods, under the same conditions, is twenty degrees hotter for 1936 than for 1935. In fact, for the first fifteen minutes of operation, this oil is hotter than in 1935.

This serves to speed up the expansion of the push rod, minimizing the difference between block and push rod expansion- thus minimizing the valve lash variation during the warm-up period. This makes the operating clearance for tappets more constant for 1936 than for 1935 thruout the warm-up.

After warm-up, this oil for 1936 is considerably cooler than that of 1935. The chart shows that the oil to the rocker arms and push rods for 1936 is forty degrees cooler at the higher speeds than in 1935. In fact, this drop in oil temperature begins after the first fifteen minutes of operation or after stabilization of the block and push rods has taken place. Normally, in the 1935 engine at high speed, the oil temperature was apt to be one hundred degrees above the water temperature. This hot oil, being poured over the push rods, tended



to expand them, while the block, which was affected mainly by the water, was no longer expanding. This, of course, tended to decrease the tappet clearance.

With the full-length water jackets of the 1936 engine, the oil temperature is only seventy degrees above the water temperature. Because the oil to the rocker arms and push rods is further cooled by passing directly thru the water diagonally across the block, the oil at the push rods is only sixty degrees above the temperature of the water and, therefore, the tendency to decrease the tappet clearance is minimized.

To summarize this, we find that the 1936 engine incorporates a much more constant valve lash than the 1935, because the full-length water jackets and rocker arm oiling system in-

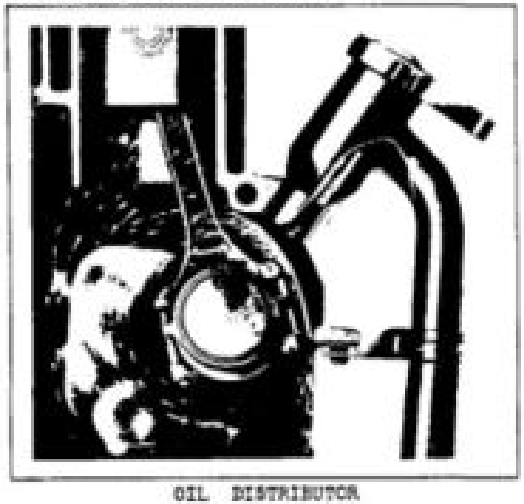
corporate an inherent thermal or heat balance. Thus, valve durability is enhanced; quietness of operation, hot and cold, is improved; and, the stability of the engine at idle becomes pronounced.

The oil pressure pipes, which formerly were pressed in the block to carry oil to the three main bearings, are replaced by a rifle-drilled passage, which serves the same purpose.

With the full-length water jackets, the cooling system capacity is increased to fifteen quarts. In line with these changes, the radiator core is redesigned with a new section, which gives more efficient heat dissipation.

CRANKCASE VENTILATOR BAFFLE

The crankcase is fitted with a baffle at the breather opening, to prevent loss of oil vapor through the breather at high speeds. The baffle is in the form of a substantial sheet metal plate, which is secured in the crankcase by two screws. There is no change whatever in the normal functioning of the regular crankcase ventilation system, as all undesirable vapors and fumes are still allowed to escape through the breather. The new baffle simply allows fumes to escape without loss of lubricating oil. A handle, welded to the ventilator cap, facilitates its removal.



OIL DISTRIBUTOR

The oil distributor body gasket is thicker and is made of composition cork, instead of soft paper, to prevent the leakage of oil. The oil distributor valve is redesigned with lighter reciprocating parts to eliminate harmonic periods, thus making the operation more silent.

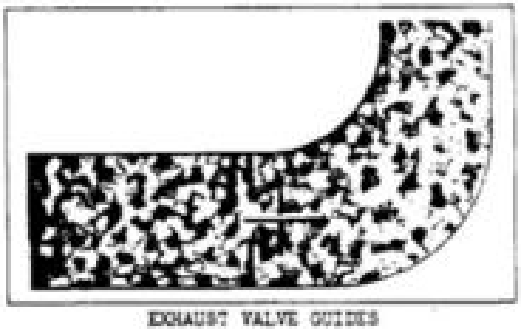
OIL PUMP

The oil pump drive mechanism is strengthened and improved to increase its durability. The tang which connects the distributor and rotor shafts is wider and stronger and is located in the distributor shaft instead of the rotor shaft.

Along with this change, the rotor shaft itself is increased to 9/16" from 1/2", while the pin which connects it in the rotor is enlarged from 5/32" to 3/16". The set screw, which holds the entire pump assembly to the crankcase, has a stronger tapered end, 3/32" larger in diameter than before.

VALVE ROCKER COVER GASKET

The pieces of cork, which make up the valve rocker cover gasket, are dove-tailed together and then stapled. This design insures a more leak-proof oil seal.



EXHAUST VALVE GUIDES

A counterbore, 1/4" deep and slightly larger than the reamed hole for the valve stem, is bored in the lower end of the exhaust valve guide, to prevent the accumulation of carbon and sludge, which might cause the valve to stick at this point.

FLYWHEEL RING GEAR

The flywheel ring gear is cut with an extra, or hunting tooth, so that it now has 133 teeth instead of 132. The odd number of teeth permits them to be machined with greater accuracy, as the teeth on the cutting hob do not cut on the same gear teeth at each revolution of the gear during the machining operation. Thus, hob imperfections are not localized in a few gear teeth. The hunting tooth also increases the durability of the ring gear, as the starter gear does not mesh with the same sets of teeth as it revolves. Due to the addition of the hunting tooth, the flywheel gear to starter gear ratio is increased to 14.78 to 1 from 14.66 to 1.

COMPARATIVE SPECIFICATIONS

	1935	1936
Maximum horsepower at RPM	80 at 3200	79 at 3200
Horsepower at 1000 RPM	29.5	30
Horsepower at 2000 RPM	59	60
Maximum torque	155 ft.lbs.	156 ft.lbs.
Engine RPM at maximum torque	1000 to 2000	900 to 2000
Compression ratio	5.6 to 1	6 to 1
Carburetor float chamber vent	To atmosphere	To air horn
Carburetor air horn attachment	2 screws	3 screws
Carburetor idle port	One slot	2 punched holes
Oil pump rotor shaft diameter	1/2"	9/16"
Oil pump rotor pin diameter	5/32"	3/16"
Distributor shaft tang width	9/64"	11/64"
Oil pump set screw taper diameter	7/32"	5/16"
Exhaust valve guide counterbore	None	.362" dia. x 1/4" deep
Crankcase ventilator baffle	None	Sheet metal
Radiator core section	365 sq.in.of .25" x .40" copper	365 sq.in. of .25" x .55" copper
Cooling system capacity	11 quarts	15 quarts
Inlet manifold ports diameter	1 1/4"	1 5/32"
Valve rocker cover gasket pieces	Stapled together	Dovetailed into each other and stapled
Valve spring pressure- Valve open	104 lbs.	98 lbs.
Oil distributor body gasket	Paper- .030" thick	Cork- .055" thick
Flywheel ring gear teeth	132	133
Starter gear ratio	14.66 to 1	14.76 to 1

CLUTCH

The service life of the clutch disc cushioning springs is nearly twenty times longer than before. This is due to a new method of processing the wire. The new treatment, known as "shot-blasting", consists of exposing the wire to a blast of thousands of small lead pellets, which peen the surface evenly and cold-work the material to such an extent that its fatigue strength and endurance capacity under repeated stress are multiplied greatly. With the new process, Chevrolet is able to make springs which show a life equal to or better than that of the other clutch parts. This "balanced construction" means long life and dependability in the clutch assembly. The arrangement of the bolts which attach the clutch cover to the flywheel is revised, so that the designed relation of the pressure levers with the release bearing plate is maintained more accurately at both the initial and service installations of the cover assembly. The nine bolts are spaced in groups of three at each of the pressure lever supports. At each of these places, one bolt is located on the centerline of the support, while the others are located at each side of the support. Formerly, the bolts were spaced in groups of three between the supports.

TRANSMISSION

The uniformly successful performance of the MASTER syncro-mesh transmission warrants its continuance for 1936 with only one change. The speedometer driven gear is mounted above the main shaft center instead of below, so that the speedometer cable will clear the new brake main cylinder, mounted on the frame. This necessitates a change from a left hand spiral to a right hand spiral on the speedometer gears. The gear ratio is not changed.

FUEL SYSTEM

A rubber collar is fitted tightly around the filler neck to provide further insulation of the neck through the body rear panel on all models. This collar supplements the collar furnished to conceal the clearance hole in the panel. The new rubber collar prevents the filler neck from contacting the raw edge of the clearance hole, thus preventing squeaks

and possible wear of the neck.
The fuel pipe is reshaped to accommodate the changes in the frame and the installation of the new hydraulic brakes.

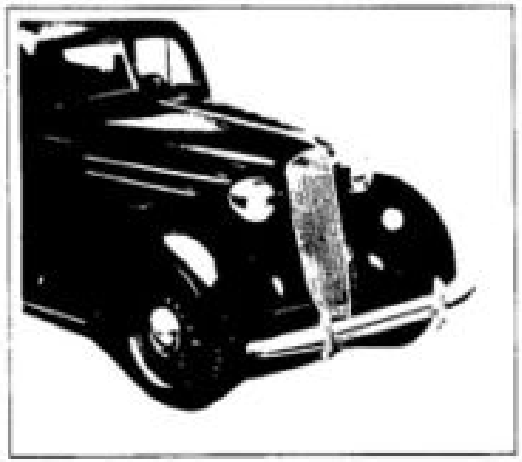
STEERING

During the 1935 season, the steering geometry of the MASTER Conventional model was revised to provide better steering. The forward end of the steering connecting rod was lowered 7/8" to change the line of its travel, thus reducing the angular loss as set up in the various axle travel positions. This change necessitated redesigning the connecting rod, the steering and third arm, and the ball swivel joint connecting the rod and arm. At this point, the connecting rod is suspended below the third arm by a ball swivel in a socket of the automatic adjusting wedge type, similar to that used on the 1 1/2 TON trucks. This type of socket insures full bearing contact on the ball swivel at all times.
On both the Knee-action and Conventional models, the steering column clamp at the instrument panel is revised to compensate for changes in the panel.

SHEET METAL

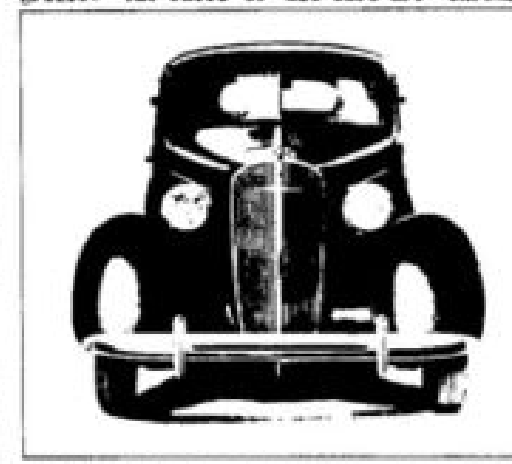
APPEARANCE

The 1936 MASTER passenger cars are even more beautiful than those of the previous model. The entire car face is redesigned to create a new and more pleasing appearance. The new features blend with the graceful 'Turret-top' bodies in a harmony and unity that makes these cars the most beautiful, attractive, and individual cars on the road.



GRILLE

The front of the radiator is entirely new. The "V" shaped grille, narrower, and of more refreshing appearance, is located higher in the shell, and arches gracefully in both vertical and horizontal planes. It is framed by a narrow, chrome-plated edging, and is effectively set off by the darker mass of the radiator shell.
A distinctive, wide, chrome-plated moulding of terraced, shallow "V" section follows the apex of the grille from the bottom, gradually broadening to its greatest width of 1 3/8" at the top of the radiator, over which it sweeps in an unbroken line to be continued as the central hood hinge which tapers to a gracefully rounded termination at the cowl.
An ornament of modernistic styling surmounts the moulding at the radiator to enhance the streamlined appearance of the car.
The grille consists of stampings, welded together and braced to form a strong unit. The narrow vertical bars gradually vary in width. The widest are at the center and are spaced farther apart than those at the edges of the grille. The faces of all bars are chrome-plated. With this design, a unique effect, individual to Chevrolet, is created. The grille increases in brilliance from its outer edges, reaching its greatest brilliance at the wide center moulding at the grille apex.



CHEVROLET EMBLEM

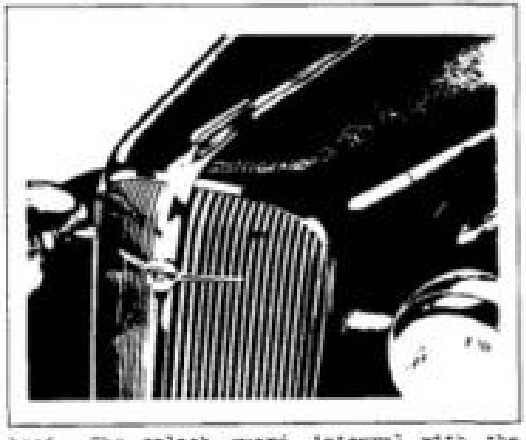
A more attractive Chevrolet name plate is mounted higher on the grille body.

The tapered arms of this decoration are longer and narrower than before. At their center, a disc-like medallion in vermillion and chrome-plate offsets the blue Chevrolet emblem.

The starting crank hole cover is a separate piece, inset in the center moulding of the grille. It is not easily perceptible, as it is of the same shape as the moulding.

RADIATOR SHELL

The lines of the radiator shell flow more smoothly from the arching grille into the



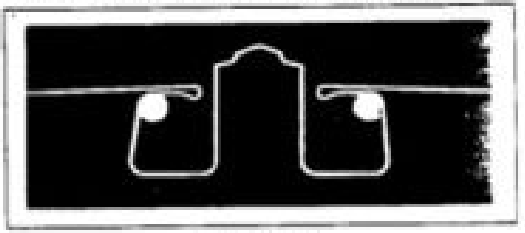
hood. The splash guard, integral with the shell, continues the grille contour and merges it into the nose of the fenders without a visible break. The shell is much deeper than before, creating an appearance of greater strength at the front of the car.

HEAD LAMPS AND SUPPORT

The chrome-plated head lamps are smaller in diameter and longer, with more convex lens to conform in appearance with the narrower radiator. They are more attractively mounted on streamlined supports projecting from the sides of the radiator shell. This mounting gives a much improved appearance to the front end of the car, as it reveals the smooth unbroken contours of the valleys between the hood and fenders. It also makes cleaning between the fender and the radiator easier.

Each support is a die-casting finished in black dulux. It is fastened through the radiator shell to a local reinforcement by two bolts extending from the inside of the shell.

The head lamp is bolted to a projecting boss cast at the center of the support. A hole in the lower side of the support gives access to the head lamp attaching parts, permitting easy removal or adjustment of the lamps. The lamp cable runs from the lamp and through the support inside of the radiator shell, and thus is entirely concealed from view.

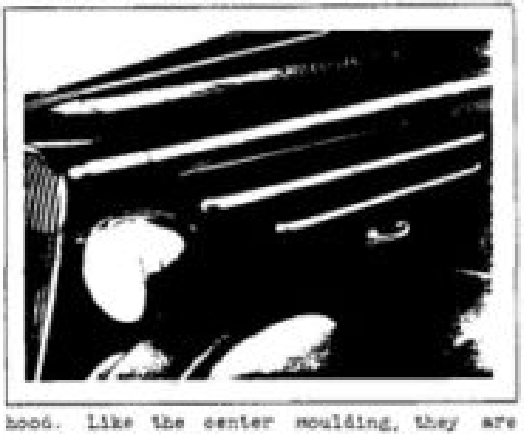


HOOD HINGE

There are two invisible hood hinges, one for each of the hood top panels. These are integral with the wide hood center moulding. The moulding is a separate stamping of deep channel section on either side of which a wide and deep valley is formed by a vertical flange. A hinge rod engages piano type hinges at the top of this flange with matching hinges in the hood top panel. As the panel hinges are located a short distance outside of the panel inner edge, this edge swings down into the valley at the side of the moulding when the hood is raised.

HOOD LOUVRE MOULDINGS

The applied hood louvre mouldings of stainless steel are of the same terraced "V" shape as that at the center of the radiator and



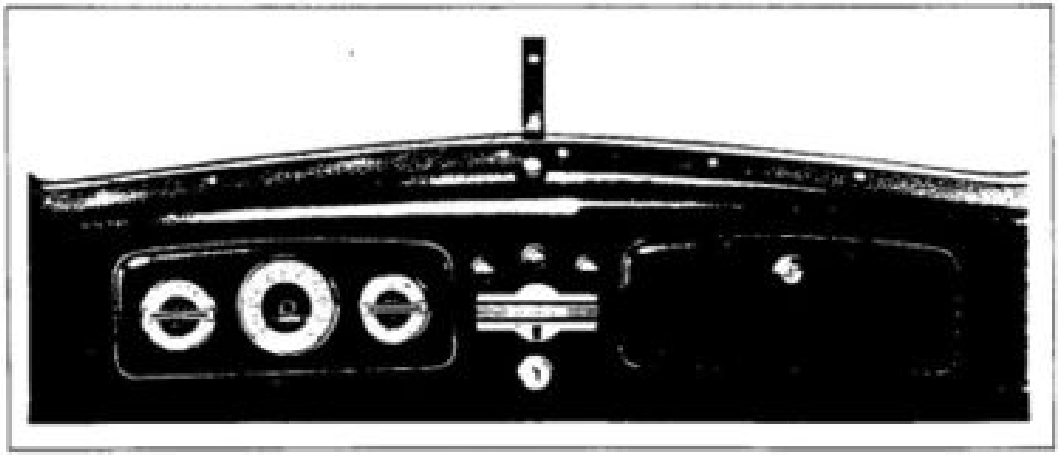
hood. Like the center moulding, they are tapered in width, being much wider at their forward ends. They are also longer than the double beaded mouldings of the previous model which, with their new shape, create an appearance of greater hood and car length.

RUST PREVENTION

The life and durability of the fenders and running boards is increased by a "Cronodine" process through which these parts are put before enameling. In this process, the parts are dipped into a solution of Cronodine, a red-yellow powder, and water heated to a temperature between 180 and 190 degrees. In this bath, the pores of the metal absorb the Cronodine. The parts are then washed thoroughly in cold water. The Cronodine absorbed by the metal forms a thin, smooth, tightly-adherent coating that acts as a rust preventative and greatly increases the adhesion of the enamel.

COMPARATIVE SPECIFICATIONS

	1935	1936
Grille contour	Flat sided "V"	"V" arched horizontally and vertically
Grille width at shoulders	18"	19-1/2"
Grille width at bottom	15-1/4"	11-3/4"
Center moulding treatment	7/16" round at grille center & hood hinge	Continuous on grille and cowl; 1-3/8" wide at radiator; 3/4" wide ends
Grille bar construction	Stamped in one piece	Welded together
Grille bar width	1/8"	1/4" at center, 5/32" at outside
Head lamp overall length	9-3/4"	10"
Head lamp diameter	8-13/16"	8-3/16"
Head lamp lens diameter	7-11/16"	7"
Head lamp lens length protruding	1-5/16"	1-1/2"
Head lamp support	Vertical from fender valley	Horizontal from radiator
Hood hinge type	Single continuous	Two piano type hinges
Hood louvre mouldings	Two narrow beads	Wide terraced "V"
Hood louvre upper moulding length	32-7/8"	34-7/8"
Hood louvre lower moulding length	23-7/8"	26-7/8"



INSTRUMENTS

COLOR TREATMENT

The appearance of the instrument panel and instruments is enhanced by a smarter color treatment.

The instrument panel proper is painted a smooth, metallic, gray color, while the instrument carrier and glove compartment door panels are of a deeper shade of gray.

The control buttons, of jet black bakelite with ivory lettering, stand out sharply on their lighter background. A similar effect is produced by the compartment door knob, which is

black, except for its chrome-plated lock. Black figures on the instrument dials and black targets at the center of the instruments are intensified by backgrounds of rich ivory. The pointers of all instruments, except the speedometer, are red, while the speedometer needle is black with a red point and markings. The combined fuel and heat indicator gauges are separated by a horizontal ivory strip decorated with a black line. An identical treatment separates the ammeter and oil pressure gauges.

INSTRUMENT PANEL DECORATIVE PLATE

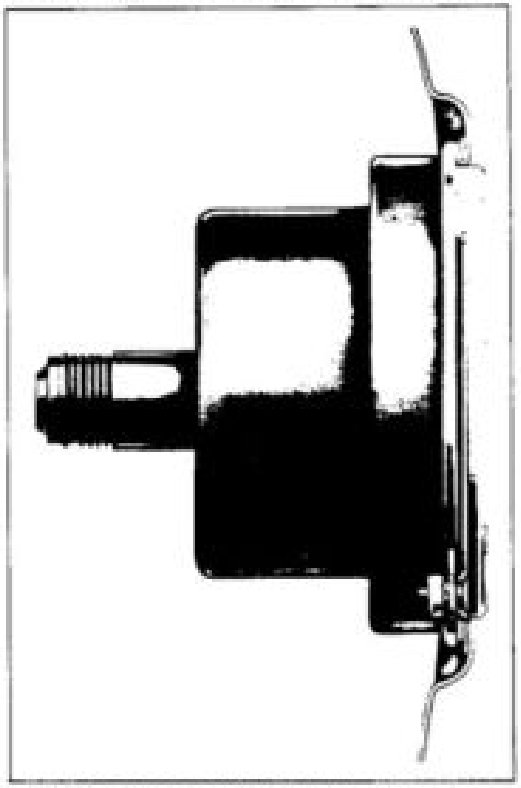
The decorative plate, provided at the center of the panel for the installation of radio controls, is changed to give a more pleasing effect. It is of rectangular shape with a disc-like central portion wider than the rectangle. The name "Chevrolet" is stamped in neat letters at the disc center with the Chevrolet insignia above and balancing vertical lines below.

Two wide black lines extend horizontally the full width of the plate, one above and one below the name. Two series of three narrower black lines between these two and parallel to them counterbalance each other at either side of the name.

INSTRUMENT MOUNTING

The arrangement and operation of the various instruments is the same as in 1935. Their mounting, however, is simplified and improved. The former separate panel upon which they were mounted is now pressed integral with the panel proper. Each instrument, or combination of instruments, is mounted separately to this panel. This permits separate and easy removal for servicing.

At each instrument, a steel disc incorporating attachment bolts is crimped to the panel by a flange extending inward from the instrument clearance hole. With these separate mountings, the instruments are held more rigidly in place, as they now have the full support of the panel.



The bulbs, which indirectly illuminate the instruments, are located in carriers at each side of the speedometer. They are of less capacity, to decrease glare and make the instruments more readable. These new bulbs are of the same size as the parking bulbs in the head lamps.

COMPARATIVE SPECIFICATIONS

	1935	1936
Color of instrument panel proper	Black	Light metallic gray
Color of panels on panel proper	Walnut grain	Dark metallic gray
Color of control buttons	Dark brown	Black with ivory letters
Color of compartment door knobs	Chrome plate	Black with chrome-plated lock
Color of instrument figures	Dark brown	Black
Color of instrument targets	Dark brown	Black
Color of pointers	Light brown	Speedometer pointer red & black; others red
Instrument mounting	On separate panel	Separately to instrument panel proper
Instrument bulb capacity	3 Candlepower	1-1/2 Candlepower

ELECTRICAL

The tail and stop lamp of the Town and Sport Sedans is mounted on the left rear fender, instead of on the trunk door, as heretofore. This assures that a warning light is directed to the rear when the trunk door is opened and also improves the car appearance. The streamlined bracket upon which it is mounted is identical with those on the other body types, except that it is longer, so that it is not hidden by the trunk. On all body types, the license plate bulb is located within the lamp body and is protected by a thick glass window.

COMPARATIVE SPECIFICATIONS

	1935	1936
Tail lamp location on trunk bodies	Mounted on trunk	Mounted on fender
License plate bulb	Projected through lamp body	Protected by window in lamp body

BODIES

The MASTER line of "Turret-Top" bodies by Fisher, which in 1935 created new conceptions of motor car beauty and construction, is retained for the 1936 season. This line consists of the Sedan, Sport Sedan, Coach, Town Sedan, Business Coupe, and the Sport Coupe with a rumble seat.

DOORS

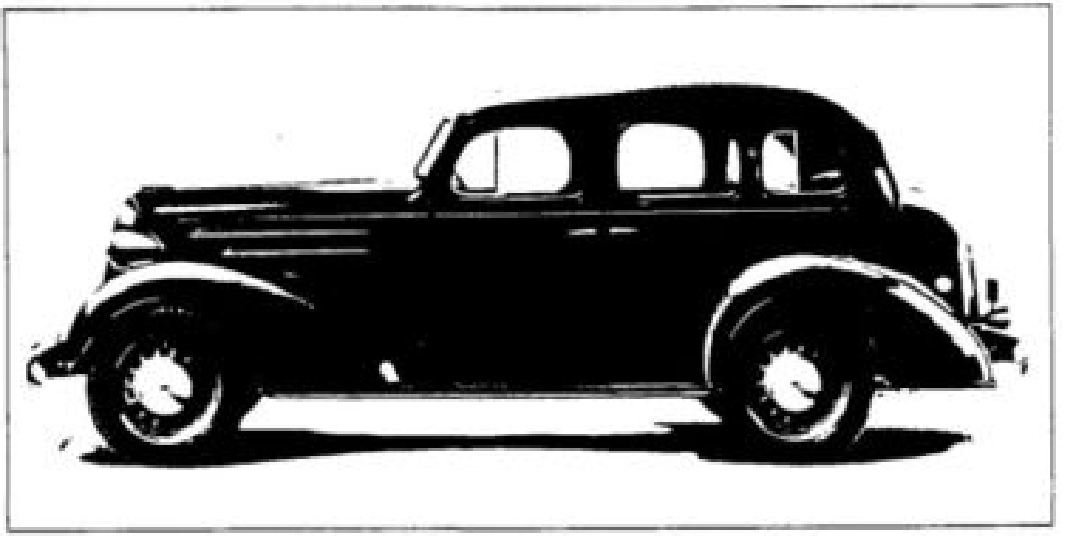
The front doors of all bodies are now hinged at the front on two sturdy hinges. This change is important, for it increases safety. There is no tendency for the doors to open in case

they are not properly shut, as the wind resistance of the car in motion keeps them closed.

SEATS

The seat cushions are of a new "luxury" construction which permits the passengers to ride for sustained periods without fatigue. In each seat cushion, the spring coils are individually encased in burlap retainers and are held in place securely, so that there is no possibility of any coil becoming loosened and

causing uneven pressure against the upholstery. The front seat cushions of the Coach and Town Sedan bodies extend the full width of the car.



The back of these seats is split at the center and the right half is hinged to permit the entrance of passengers to the rear seat. The same type of 'finger-tip' adjustment is provided, as on the full-length seats of the other bodies.

The forward edge of the rear seat cushion on all five passenger bodies extends down to the floor, creating an unusually luxurious effect.

UPHOLSTERY

The upholstery, of rich appearing, high-grade mohair, is of a lighter gray color than heretofore. It brightens the interior of the car and harmonizes with the balanced color scheme of the mouldings, hardware, and equipment. An optional material of high-grade flat cloth of the same shade also is available. On the seat cushions and backs, two wide, vertical pleats, equally spaced between each other and the sides of the seats, create a neat, semi-smooth surface effect. The trim of the ceiling, sides and doors, also light in shade, is tailored in a manner similar to that of the previous model, while a smart, single beaded seam is carried around the door edges.

MOULDINGS

The moulding treatment of the windshield and all windows is unusual. The steel mouldings are painted a smooth gray with a leather grain effect which merges into a smooth jet black at the moulding inner edge.

HARDWARE

The location of the interior hardware--door latch levers, toggle locks and window crank handles, is very much the same as on the 1935 model, with the exception of that on the front doors, where it is relocated to agree with the new hinging. In this rearrangement, the front door latch handle is located at the extreme front of the door where it cannot catch on the driver's coat sleeve.

The treatment of the hardware is very smart and effective. The escutcheons which seal all crank handles and toggle type door locks through the upholstery are jet black bakelite. The crank handles, door latch levers, and lock toggles are of the same design as heretofore

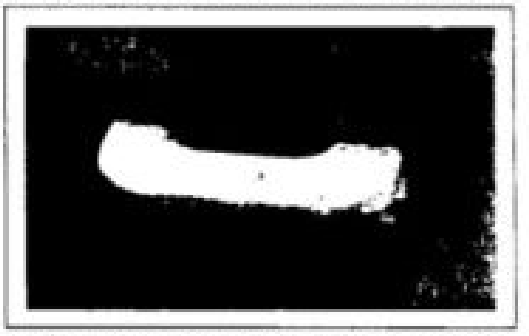
and are chrome-plated. The bakelite knobs on the crank handles are black with attractive inserts in their ends. The inserts are of Tenite, a high-grade moulded material, and are colored and grained to simulate marble. The exterior door handles are chrome-plated and of the same streamlined shape as heretofore.

EQUIPMENT

The internal adjustable sun visor is completely covered with soft cloth which harmonizes in color and texture with the headlining. A finger pad of gray leather at the center of its lower edge prevents soiling.

In all five passenger bodies, foot rests are built into the rear of the front seat to provide plenty of leg room. In the Sedan and Sport Sedan an ash receptacle similar to that used in 1934 is located in the back of the front seat at the center above the robe rail. This takes the place of the ash receivers formerly located in the arm rests and permits shortening of the rests to allow more room for entering the rear seat. In the Coach and Town Sedan, ash trays are provided in the forward ends of the rear seat arm rests as before.

The front seat arm rests furnished on both front doors of the Sedan and Sport Sedan and on the left front door of the Coach, Town Sedan, and Coupe are of a new design. They are of a short "U" shape and are fastened to the door panel through the arms of the "U", a space being left between the door and the arm proper.



By this means, the rests serve two-fold purposes, as they also are used as pull handles to close the doors. The rest of the interior equipment, rear window shades, rear vision mirror, assist cords, and dome lamps, are changed only to agree with the new color scheme.

COMPARATIVE SPECIFICATIONS

	1935	1936
Front door hinges	At rear	At front
Front seat type - Coach & Town Sedan	Separate bucket seats	Single full-width seat with split back
Five passenger bodies, rear seat cushion depth	To seat riser	To floor
Window moulding color	Brown burl walnut grain	Gray leather grain with black edge
Hardware color treatment	Chrome-plated escutcheons and handles with Tenite knobs	Black escutcheons, chrome handles, black knobs with Tenite inserts

SPECIAL EQUIPMENT

A complete line of accessories is available at extra cost for the discriminating motorist who wishes to add to the beauty and convenience of his car. This equipment is designed and built to Chevrolet specifications with the same careful craftsmanship and choice of materials that is evident in all Chevrolet products. By this means correct operation, perfect adaptability and easy installation are assured.

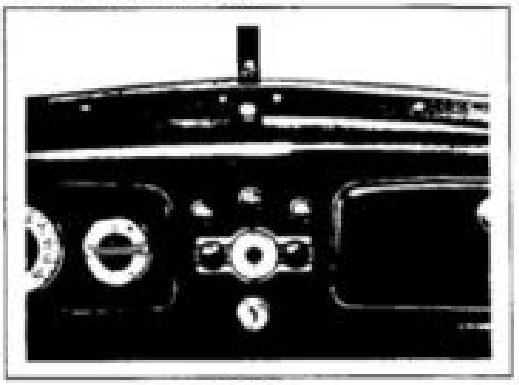
The following list includes all special equipment available for the 1936 models. In addition to the new equipment, many of the previous accessories are retained, and these are redesigned to conform with the new cars. The descriptions which follow this list describe only that equipment which is new or decidedly different from 1935.

Radiator ornament.
Radiator cover.
Radio.
Radio dash controls.
Radio speakers.
Headlamp beam indicator.
Fender marker.
Seat covers.
Frame type windshield defroster.
Electric fan windshield defroster.
Right hand windshield wiper.
Cigar lighter.
Right hand sun visor.
Visor vanity mirror.
Hot water heaters.
Ventipane insect screen.
Ornamental horn button.

Ornamental gearshift knob.
Hand brake lever extension.
Glove compartment, ash receiver and clock unit.
Rear view mirror with clock.
Wheel discs.
Shield for rear fenders.
Wheel moulding.
License plate frames.
Matched horns.
Fender well wheel carrier.
Tire cover lock.
Wheel lock.
Bumpers and guards.
Interior baggage carrier.
Oil temperature regulator.

RADIATOR ORNAMENT

The new special radiator ornament is beautiful in design and blends perfectly with the new front end design.



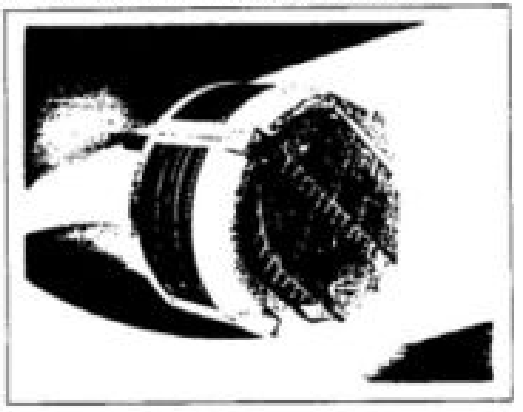
RADIO

The radio controls are mounted on a plate of new and more attractive design which is located at the middle of the instrument panel above the ignition lock, as heretofore, replacing the instrument panel decorative plate. The lettering of the control dial is changed to agree with the new color scheme of the regular instruments, while the control knobs are black.

In addition to the radio speaker now available another of a new design is provided as special equipment. This is set into the ceiling of the car just above the windshield.

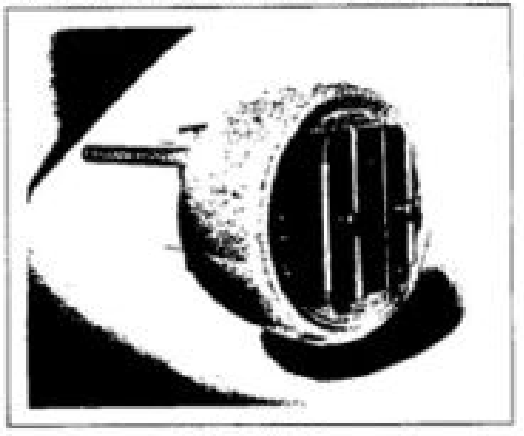
ELECTRIC FAN WINDSHIELD DEFROSTER

The combination electric fan and windshield defroster is a very useful accessory, for it is used both as a cooling fan in the summer and as a windshield defroster in the winter. In winter it circulates the warm air of the car heater against the windshield. The fan is a compact unit which fastens to the top center of the instrument panel, where it may be adjusted to any position. It does not in any way interfere with the driver's vision or with the instrument panel controls.



HOT WATER HEATERS

The large and small hot water heaters are made more attractive by changes in appearance. The small heater is now of the same cylindrical shape as the large and operates in the same way except that it does not throw off as much heat.



BUMPER GUARDS

The bumper guards, supplied at the factory with the bumpers, are fastened by single bolts to both front and rear bumpers. They are more pleasing in design, as their lines blend better with the streamlining of the car.

SUN VISOR

A right hand cloth-covered sun visor, matching the one furnished as regular equipment, is an added convenience for the front seat passenger.

WHEEL DISCS

Neat, chrome-plated wheel discs of a new design are easily assembled to the wheels.

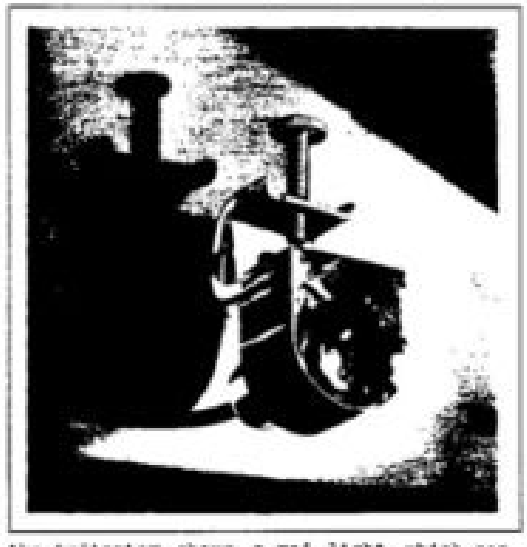
VANITY VISOR MIRROR

This mirror, which is clipped to the sun visor, is an especial convenience for women drivers, as it is accessible at all times. The mirror is of double strength crystal glass, six inches long by four inches high. Its setting is of steel, enamelled a bright color which harmonizes with the visor.

HEADLAMP BEAM INDICATOR

The headlamp beam indicator, added late in the 1935 season, is changed in color only. This attachment is a great safety convenience for night driving, as it enables the driver to ascertain when he has properly depressed his headlamp beams for approaching cars.

The indicator is a small red light, set in an attractive base, which is colored to harmonize with the instrument panel. It is attached to the panel by a screw clamp and is wired directly to the headlamp dimmer foot switch. While the full headlamp beam is being used,



the indicator shows a red light which continues to shine until the driver depresses the foot switch and the headlamp beams are lowered. The red light is not bright enough to annoy the driver.

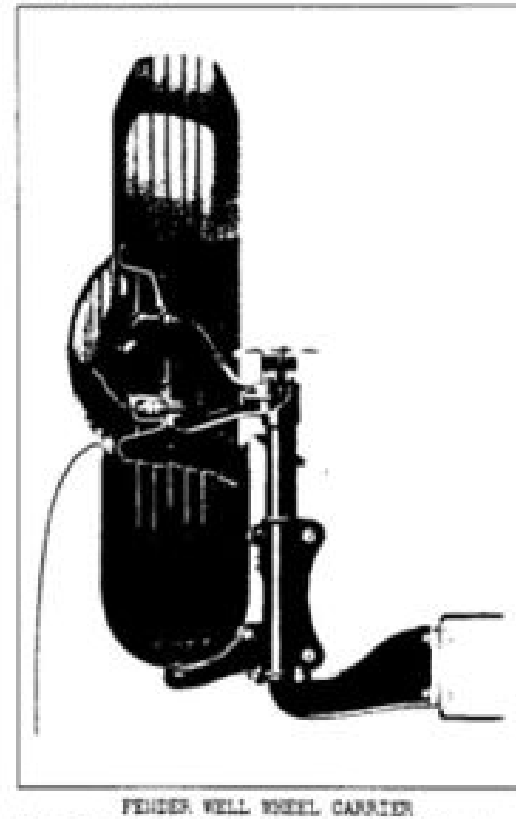
FENDER WHEEL SHIELDS

During the 1935 season, wheel shields, which attach to the rear fenders, were made available for the motorist who wishes an extra note of smartness in his car.

These shields fit perfectly into the kickup of the rear fenders where they are very easily attached. The shield material is bonderized metal painted with a coat of baked rubber enamel and then finished with Dulux finishing enamel. A variety of colors is available and these match perfectly with Chevrolet standard colors. Modernistic chrome-plated strips on the body of each shield enhance its appearance.

INSECT SCREEN

An insect screen fitted in the opening at the front door ventipanes prevents insects from being blown through the opening into the car. The screen is of galvanized wire mesh bound by a steel rim, and is attached in the opening by integral spring steel hook fasteners. The entire unit is finished with black enamel.



FENDER WELL WHEEL CARRIER

The fender well wheel carrier is redesigned to distribute the weight of the wheel equally between the two support brackets welded in

the fender well. To accomplish this, the support tube, formerly vertical, is now inclined slightly to the rear, and the wheel center is relocated farther to the rear and lower. This aids in lowering the car center of gravity, and shortens the support tube, making it more rigid. The support bracket of the tube (a two-piece construction which clamps the tube between two stampings, as previously,) is stronger and more rigid. Its integral arm, which formerly extended to the frame side rail, is replaced by a cast malleable iron bracket of I-beam construction. This extends from the side rail to a point below the support bracket to provide a rigid mounting for the bracket. The two members are connected by four rivets. Four bolts attach the cast bracket through the web of the side rail to a heavy plate reinforcement in the channel of the rail. Two torizontal arms are added to the wheel support which hinges on the tube, providing three points of attachment for the wheel. This is done to agree with a new type of spare wheel lock furnished as special equipment.

WHEEL LOCK

An entirely new wheel lock is provided as special equipment to lock the spare wheel to the fender well wheel carrier, or to the wheel carrier at the rear.

This lock consists of a large cast housing, incorporating three drilled bosses which cover the three nuts attaching the wheel to the carrier. A lock cylinder at the center of the housing causes three plunger bars to distend into grooves in the bodies of the attaching nuts. Three conical springs in the drilled bosses bear against the nuts to prevent rattling. The lock is large enough to just clear the wheel flange, allowing no room for the insertion of a tool to pry it off.

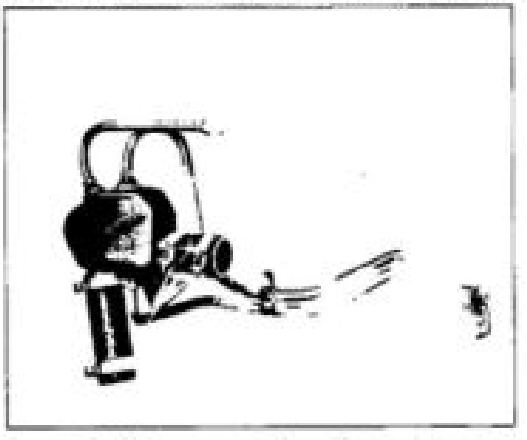
OIL TEMPERATURE REGULATOR

An oil temperature regulator, developed by the Harrison Radiator Corporation, is available at extra cost. It cools the engine oil in warm weather and warms it in cold weather, thereby improving car performance and making car operation more economical.

The cooling or heating unit is called a "Visco" and consists of a honeycomb core contained in a stamped steel case. A system of pipes and hoses connect the Visco to the oil distributor and to the engine cooling system.

In operation, water from the cooling system flows around the Visco core, while the oil flows through the core. Two oil pipes connect the Visco to a special oil distributor body similar to that already on the car, but incorporating two bosses for the attachment of the pipes. These pipes are supported at mid-length by a clamp to the water pump body. Two hoses connect the Visco to the water pump and to the radiator core outlet, their attachment being made by galvanized iron clamps. A by-pass pipe joining the Visco to the cylinder head just below the cooling system thermostat acts as a vent. All pipes are of large diameter, thick-walled, seamless copper tubing and are attached to the Visco and to the engine by leak-proof brass connectors. The Visco itself is bolted to the cylinder block by two bolts through a simple stamped bracket welded to its case.

In hot summer months, the temperature of the oil is higher than that of the water in the engine cooling system. When the Visco is used, this oil is forced by pump action to flow through the Visco core, where it is cooled by the water circulating around the



core. In this manner, the oil maintains its viscosity, protecting the engine from excess heat and friction.

In cold weather, the oil becomes heavy. When in this condition, it takes considerable time before it is heated to running temperature. Water heats more rapidly than oil. Therefore, with the aid of the Visco, the oil is warmed more quickly. The result is faster warm-up of the engine, better lubrication, less wear on operating parts, increased fuel economy and prevention of crankcase dilution.

Chevrolet 1936 Engineering Features

Standard Passenger Cars

INTRODUCTION

For 1936, Chevrolet presents a line of entirely new STANDARD passenger cars, cars which are more beautiful, more comfortable, safer, easier to handle, more economical and more durable than ever before.

There are seven body styles in this line. These are the Sedan, Sport Sedan, Club Sedan, Coach, Business Coupe, Cabriolet and Sedan Delivery. The Cabriolet and the Town and Sport Sedans are additions to the line. With but few differences, these new cars are identical with those of the 1936 MASTER passenger line. They have the same sheet metal and body appearance and are powered by the same engine and stopped by the same hydraulic brakes. In comparison with those of the previous STANDARD model, they are much improved.

THE NEW CARS ARE MORE BEAUTIFUL:

They are much longer and wider and are gracefully streamlined with MASTER styling to create the appearance of even greater length and less height. Radiator, hood, fenders, and running boards, entirely new for the STANDARD model, are like those of the MASTER. The artistic and attractive MASTER "Turret-top" bodies, slightly shorter to fit the STANDARD wheelbase, provide beauty unexcelled in the STANDARD price class.

The wheels on all types are of the sturdy and attractive steel spoke type. As on the MASTER, all of these appearance features, beautiful in themselves, are skillfully blended together so that no individual feature stands out, but all combine to create an impression of unity.

To provide room for the new appearance features, the wheelbase is increased to 109" from 107", and the length over bumpers is increased from 170 1/2" to 182 1/2", an increase of one foot, on all types except the truck sedans. The overall length of the Sport Sedan and the Town Sedan is 183 1/4".

THE NEW CARS ARE MORE COMFORTABLE:

Sustained and smoother riding comfort is provided by an entirely new spring suspension. The new bodies provide more room for the passengers. They are wider and longer and have more headroom. The seats also are wider with improved cushion and back construction. More luxurious upholstery and a new treatment of mouldings, hardware, and equipment increase the pleasure of riding. MASTER body insulation protects the passengers to a greater extent from the elements, fumes, and noises.

THE NEW CARS ARE SAFER:

Hydraulic brakes, similar to those on the MASTER, provide smooth, rapid deceleration. The stronger structure of the "Turret-top" bodies provides greater protection for the passengers in case of accident. All doors open as on the MASTER bodies, the front door hinging at the front and the rear door at the rear.

THE NEW CARS ARE EASIER TO HANDLE

Increased car stability, improved rail shifting, lighter brake pedal pressures, greater accessibility of controls, and more legible instruments make handling of the new STANDARD easier both in traffic and on the open road.

THE NEW CARS ARE MORE ECONOMICAL:

In the engine, the higher compression ratio, full-length water jackets, improved cooling, and a baffle added to the crankcase ventilator reduce fuel and oil consumption.

THE NEW CARS ARE MORE DURABLE:
Nearly every unit in the new cars is more durable. Refinements in the engine, clutch, transmission, drive mechanism, axles, steering gear, fuel tank, bodies and sheet metal increase their life, while an exclusive new "box-girder" chassis frame forms a stronger, more rigid support for the entire car.

In addition to these improvements, many more are incorporated in the new STANDARD passenger cars. The list of new features on the next two pages points out all major improvements in more detailed form. The Progress Chart on page 38 shows how progressively these cars have been improved since their introduction three years ago.

NEW FEATURES IN THE 1936 STANDARD MODEL

FRAME
Entirely new "box-girder" construction.
Box-section side rails and cross members.
Greater frame rigidity.
Increased frame length and width.
Simple frame structure facilitates repair and service on other units.
Stronger, more simple hangers and brackets.
More solid and secure mounting of body to frame.

SPRINGS
More evenly balanced ride.
Longer front springs with reduced frequency.
Shorter rear springs.
Tapered leaf ends on front springs.
Wider spring clips.
Front springs shackled at rear.
Threaded front spring front mounting pins.
Threaded front spring rear shackles.
"Inlox" rubber mounting at front ends of rear springs.
Threaded rear spring shackles.
Graduated front spring rubber bumpers.

FRONT AXLE
Stronger front axle I-beam.
Longer king pin bushings.

REAR AXLE
Larger spiral drive pinion shaft.
Larger diameter propeller shaft.
Stronger coupling of drive pinion and propeller shafts.
Bearing added at front of torque tube.
Barrel type differential bearings.
Increased spring seat centers.
Increased car stability.
Less deflection of axle housing.

BRAKES
Hydraulic brakes.
Reduced brake pedal pressures.
Larger diameter pressed steel brake drums.
Increased service brake lining area.
One-piece brake shoes.
Quicker heat dissipation from linings.
Easier brake adjustment.
Rigid brake main cylinder and pedal mounting.
Hydraulic stop lamp switch.
Separate mechanical hand brake system with cable control to rear wheels.

EXHAUST SYSTEM
Simplified exhaust system suspension.

ENGINE
Higher compression ratio.
Increased fuel economy.
"Balanced" carburetor.
"Round-nose" camshaft.
Greater durability of valve train.
Full-length water jackets around cylinders.
Improved cooling of cylinder walls.
Lower oil temperatures.
Increased radiator cooling efficiency.
More rigid crankcase.
Greater durability of engine parts.
Rifle-drilled oil passage in crankcase.
Baffle added at crankcase ventilator.
Increased oil economy.
Improved oil pump drive mechanism.
Counterbored exhaust valve guides.
Increased durability of flywheel ring gear.

CLUTCH
"Shot-blasted" disc cushion springs.
More accurate release lever alignment.

TRANSMISSION
Ball shifting mechanism with interlock.

FUEL SYSTEM
Increased fuel tank capacity.
Stronger, welded fuel tank construction.
More sensitive and accurate fuel gauge.
"Open" fuel tank suspension.

STEERING
Larger diameter pitman shaft.
Larger and longer pitman shaft bushings.

Cork seal added at end of pitman shaft housing.
Better balance of steering effort.

WHEELS
Steel spoke wheels.
Improved hub cap appearance.

WHEEL CARRIER
Wheel carrier incorporated in trunk.
Swivel type fender well wheel carrier.

SHEET METAL
New, more attractive frontal appearance.
New streamlined radiator grille, narrower, and higher in radiator shell.
Smart moulding on grille and hood hinge.
Chrome-plated hood hinge.
New modernistic radiator ornament.
Radiator filler located under hood.
Neater radiator shell contour.
Head lamps mounted at sides of radiator shell.
Longer, more streamlined head lamps.
More rigid hood side panels.
More shallow hood ledge valley.
Two longer, more attractive hood louvres at each side panel.
Entirely new streamlining of fenders.
Flat surfaced running board with neater mat.
"Cromodine" processed fenders and running boards.

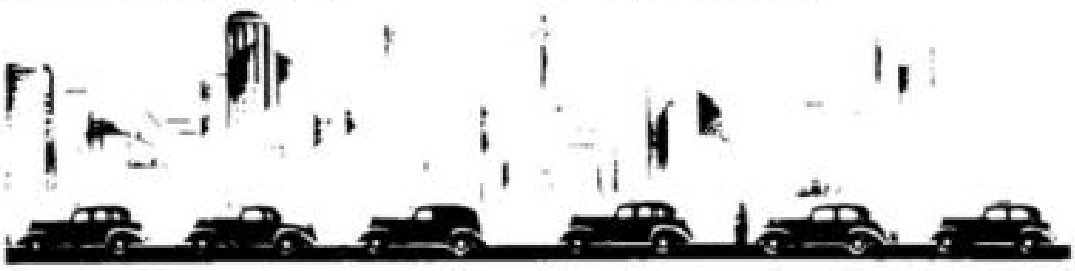
INSTRUMENTS
More attractive instrument panel with new finish.
Neater, more readable instruments grouped in front of driver.
Glove compartment added to instrument panel.
Light, throttle, and choke controls at center of instrument panel.
Provision for installation of radio controls on instrument panel.
Convenient windshield wiper control.

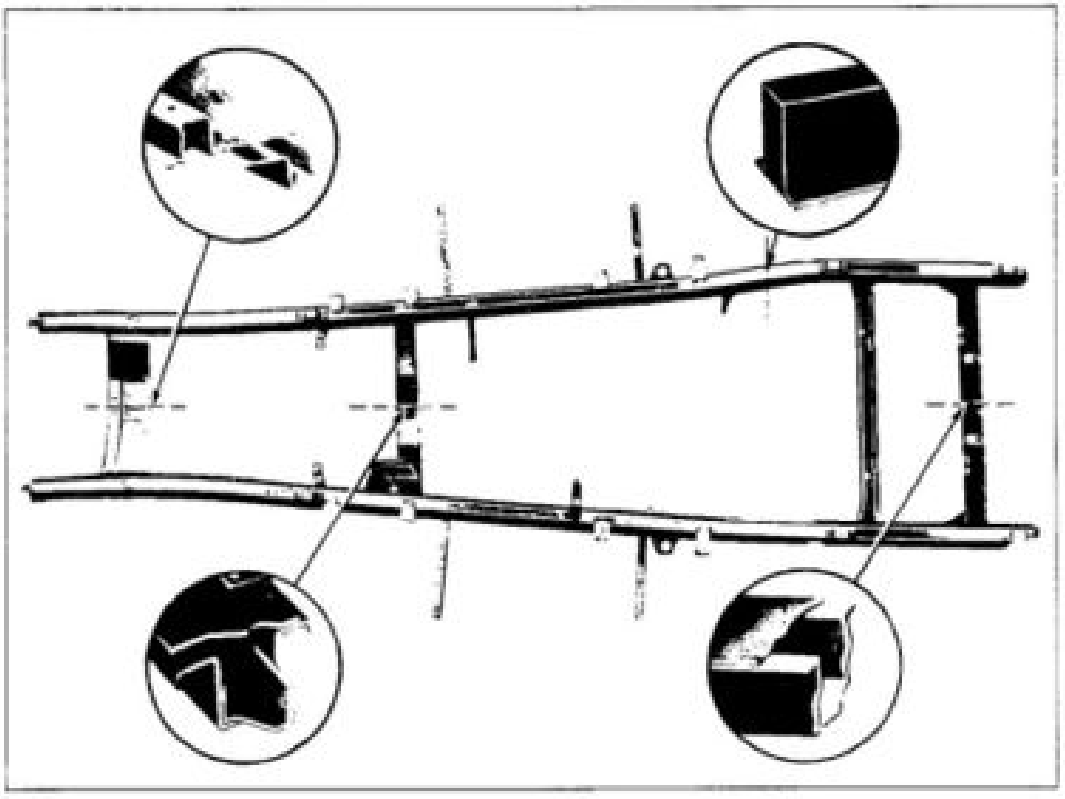
ELECTRICAL
More streamlined "Tiltray" head lamps.
More powerful head lamp beams.
Prefocussed head lamp bulbs.
Trunk model tail lamps mounted on fenders.
More secure rear license plate support.
Ventilated generator.
More direct battery ground connection.

TOOLS
Bumper type auto jack.
Grease gun added.

BODIES
More streamlined and beautiful appearance.
Increased body width and length.
Stronger construction.
Solid steel "Turret-top".
Stronger, double-cowl, front end frame structure.
Full length steel underbody.
Windstream "V" windshield with greater slope.
Windshield wiper swings from bottom through greater angle.
Sport Sedan, Town Sedan and Cabriolet added.
Wider, more comfortable seats.
Increased headroom in both front and rear seats.
More luxurious upholstery with new pleating.
More attractive hardware.
New window and windshield moulding treatment.
Larger load space in Sedan Delivery.

SPECIAL EQUIPMENT
New special radiator ornament.
Radio speaker mounted above windshield.
Radio controls mounted on instrument panel.
Head lamp beam indicator added.
Electric fan windshield defroster added.
Neater vanity mirror on sun shade.
Ring type spare tire cover.
More attractive bumper guards.
Rear fender shields added.
Glove panel, ash receiver, and electric clock unit added.
More theft-resistant spare wheel lock.
Chrome-plated wheel discs.
Oil regulator unit added.
Ventipane insect screen.





FRAME

"BOX-GIRDER" FRAME

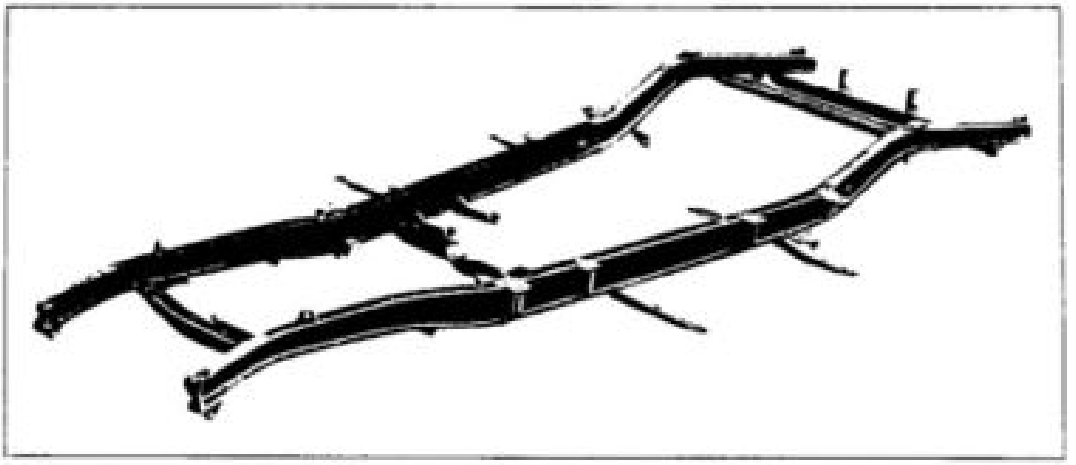
The frame of the 1936 STANDARD passenger cars is of an especially strong and rigid design, entirely different in construction from the ordinary type of frame in use today. This frame is called a "box-girder" frame, because every structural member is of sturdy, rigid box section. Frames of this type have long been known by engineers as the best for automotive purposes, for box section structural members resist both torsion and bending to a far greater extent than members employing the same amount of metal in any other form of section. Frames, similar in design, have been built before and used for many years with great success by foreign firms manufacturing a small volume of higher priced cars, but no frame of this type has ever before been produced in large volume. While admittedly the best up to the present time, this type of automobile frame has been extremely difficult and expensive to manufacture.

Two years ago, Chevrolet engineers determined that a frame of this nature could be manufactured in large volume. They designed a frame entirely of box section members. Various manufacturers of automotive frames were consulted. Intensive research resulted in new methods of manufacture and new equipment.

In the meantime, this new type of frame was tested for tens of thousands of miles over the rough Belgian Block road at the General Motors Proving Grounds and in numerous laboratory tests. In this manner, the original design was gradually improved, so that now, as adapted to the 1936 STANDARD passenger car, this frame is far superior to any type built before.

FRAME CONSTRUCTION

The new STANDARD "box-girder" frame is simple in design, its structural members consisting only of two "double-drop" side rails connected by three cross members, called respectively the front, second, and rear cross members. All of these are of full box section



and are firmly connected together by carefully located welds and rivets to form an exceptionally strong assembly. There are approximately 700 structural welds and 160 structural rivets in this assembly. A fourth cross member serves as the forward support for the fuel tank.

The frame is nearly one foot longer, to provide for the increased wheelbase, longer front springs, the relocation of the radiator, engine and body, which are moved 2 1/8" forward, and the new streamlined sheet metal. It is wider to provide the proper support for the wider body and for the rear springs, which are farther apart. Despite this increase in length and width, it is only five pounds heavier than the previous frame.

The extreme simplicity of the frame design permits much greater accessibility for greasing and servicing the car.

FRAME RIGIDITY

The new frame is an exceptionally rigid and strong load carrying unit, being twelve per cent more rigid torsionally than the previous X-type frame and twenty per cent more rigid as a beam. Due to the carefully planned locations and type of the three structural cross members, its lateral stability is increased to a great extent.

The gain in torsional rigidity increases the car stability and prevents weaving of the body. The increased rigidity as a beam dampens shocks and vibrations usually transmitted through the frame to the body on rough roads. The great gain in lateral stability tends to prevent lateral side shake of the body and body structure.

All of these improvements combine to improve the car stability, giving greater driving satisfaction, improving the riding comfort, due to the elimination of vibration and noise, and increasing the durability of all units mounted on the frame.

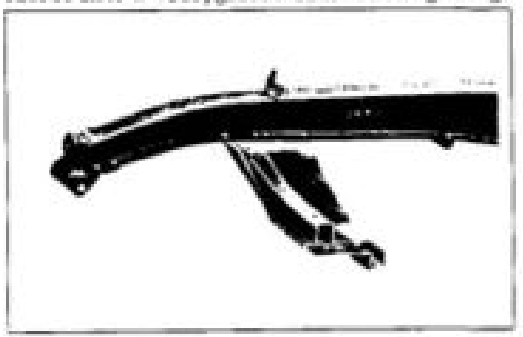
SIDE RAILS

The side rails are extremely rigid rectangular tubes. They each consist of a flanged inverted "U" section member to the opening of which a closure plate is welded to form the box section. This welding is provided every 1 3/8" along the flanges of the "U", making the closure plate an integral part of that member. Both the forward and rear ends of each side rail are closed by rigidly mounted brackets, the front spring front hanger and the rear bumper bracket. The wide, flat bottom of the side rails, with the double thickness of metal provided by the closure plates and the flanges of the "U" member, provide extremely rigid supports for the attachment of the various frame brackets, hangers, and cross members.

FRONT CROSS MEMBER

The front cross member is, in reality, two members in one, for it consists of two separate, wide, and heavy sheets of steel which are spot-welded together at seventy-six places to form a rigid unit. These two sheets are stamped so that when joined together, they form two box sections, one behind the other, connected by a wide flange of two thicknesses of metal. These two box sections extend like girders from one side of the frame to the other. The forward of these girders

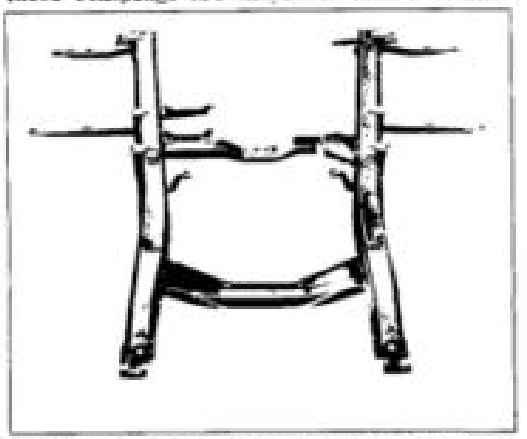
supports the front end mounting unit, consisting of the radiator, head lamps and front end sheet metal. The rear girder supports the front of the engine. A cylindrical sheet metal reinforcement, welded inside this latter girder, around each of the two holes for the bolts of the engine front mounting, provides additional reinforcement. At each side rail, this heavy, two-piece front cross member flares into a wide, gusset-like mounting flange



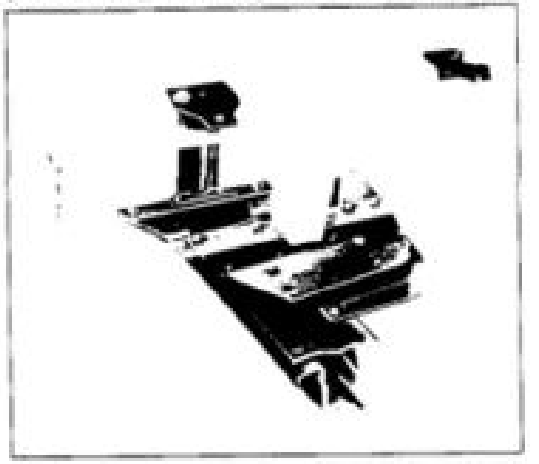
of double thickness, thru which it is riveted, by eight rivets per side, to the two flanges of each side rail. Thruout this sturdy structural member, all excess metal is removed to reduce the weight.

SECOND CROSS MEMBER

The second cross member also consists of two sheet steel stampings welded together at ninety-six places to form a single rigid unit. These stampings are shaped to form a double-



flanged single box-section girder, which extends across the full width of the frame. The lower stamping is the chief structural member of the two. In it is depressed the deep channel of the box section. The flanges at the front and rear of this channel are wide and are bent downward at each of their ends to add greater strength. This member flares into wide gussets at each side rail, thru the outer flange of which it is riveted by four rivets per side. For its major length, the channel of this member is reinforced by a "U" section stamping, which is telescoped in the channel, where it is welded to provide walls of double thickness at the front, rear and bottom of the channel. The upper plate of the second cross member is a simple, flat stamping welded at forty-four places along the flanges of the lower member



to form the box section. It extends only to the inner flange of each side rail, thru which it is riveted with the flanges of the lower member, by two rivets per side.

PEDAL BRACKET SUPPORT

At the left side of the frame, a heavy, flanged channel plate, bent into an "L" shape, projects forward from the second cross member to join the side rail. This plate supports the bracket upon which the clutch and brake pedals and the brake main cylinder are mounted. This support also serves as a structural member, as it braces the second cross member to the side rail, to provide an added resistance to lateral movement. It is firmly attached to the cross member and both flanges of the rail by six rivets, three to the cross member and three to the rail.

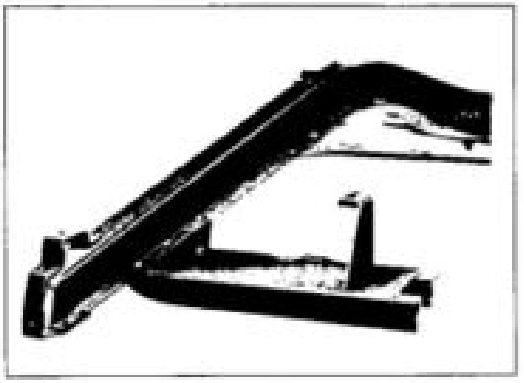
THIRD CROSS MEMBER

A third cross member of modified "L" section is provided just behind the rear kickup to support the front end of the fuel tank. While it is not intended as a structural

member, it does provide considerable lateral strength.

REAR CROSS MEMBER

The rear cross member, located at the end of the frame, is designed along the same lines as the other structural members. It is of two-piece welded construction with a large, double-flanged box section. Its outer attaching flanges are especially strong, being of double thickness thruout. Large integral gussets extend forward from each of these ends



to brace the member to the side rails, to each of which six carefully spaced rivets provide the attachment.

HANGERS AND BRACKETS

All of the various hangers and brackets on the new "box-girder" frame are extremely simple in design and are of lighter construction. They are much stronger than before, as they are more rigidly reinforced by the box section structural members upon which they are mounted. The attachment of these hangers is, in general, greatly improved, as the majority are mounted directly to the flat underside of the frame side rails and are riveted thru both of the two ply flanges of these rails.

FRONT SPRING HANGERS

The front hangers of the front springs each fulfill a three-fold purpose. They reinforce the front end of their respective side rails, provide a means for mounting the front bumper and support the front end of the front spring. They are each stamped from heavy sheet metal, which is formed in the shape of an inverted "T". The leg of the "T" encloses the front of the side rail. Its upper extremity is bent over the web of the rail where it is riveted. The bumper mounting consists of a steel boss welded to the upper part of this portion. The arms of the inverted "T" are bent backward, forming ears between which the spring end is hung, thus providing solid support for both ends of the spring pin. Rivets thru bent-over lips of each of these arms attach them to their respective flanges of the side rail.

The front spring rear hangers are sturdy drop forgings, each incorporating a cylindrical boss in which the shackle pin is mounted. The boss is forged integral with a flat, heavy attaching pad. Strong ribs brace the boss to the pad. Thru widely distributed rivets, each hanger is attached to the flat undersides of their respective side rails, the rivets passing thru the pad and the two flanges of the rail.

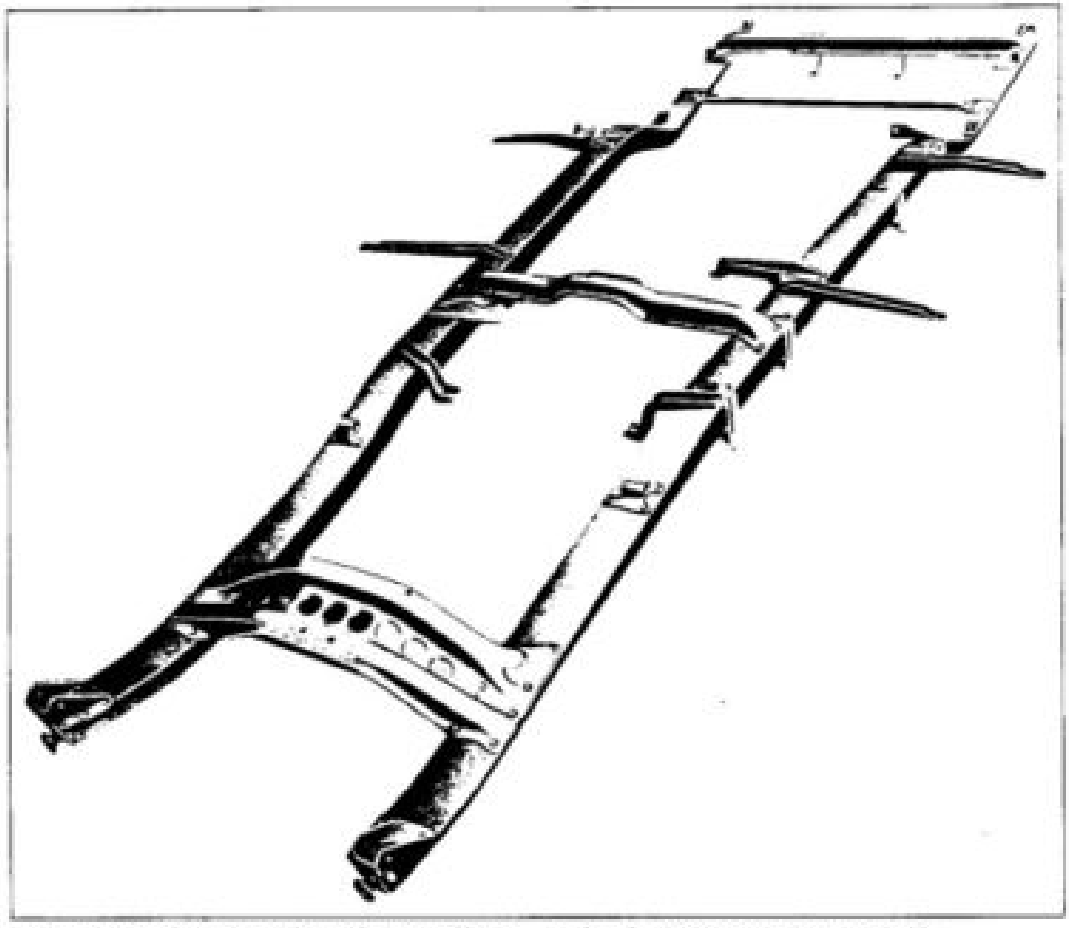
REAR SPRING HANGERS

The rear spring front hangers are wide, heavy sheet steel stampings formed in channel section for great strength. They are mounted outboard of the frame side rails by means of heavy, rigid integral arms thru which each hanger is riveted to both flanges of its side rail. In the previous frame, these hangers also served as supports for the running board, of which weight they are now relieved.

Due to the extension of the frame side rails farther to the rear, each spring rear hanger is relieved of the weight of the bumper, which formerly was mounted upon it. These hangers are strong drop forgings, very similar in design to those of the front spring. They are rigidly attached below the frame side rails in the same manner as the front spring rear hangers are attached. In addition to passing thru the flanges of the side rail, their attaching rivets pass thru the two thicknesses of metal of the rear cross member gussets, which further reinforce the attachments.

REAR BUMPER MOUNTING

The rear bumper is now supported by special brackets at the rear of each side rail, which also serve as body rear brackets and enclose the rear ends of the frame side rails. These brackets are heavy strips of steel wrapped over the end of each side rail. Blocks of steel welded to each bracket are tapped for the mounting of the bumper and the rear body bolts. Two rivets thru the top of the side



rail and two thru the side rail inner flange hold each bracket rigidly to the frame.

STEP HANGERS

Two step hangers at each side of the frame support the running boards. These are all similar in design to one another, and are simple in construction, being of plain channel section. Each is riveted to both the inner and outer flanges of its side rail. These hangers are much more rigid than those previously used, due to the greater torsional resistance of the frame side rails.

ENGINE SUPPORTS

The engine side supports are simple channel section brackets, supported in the same manner as the step hangers, instead of being suspended from the web of the former frame sub-frame. By this means, their attachment is simplified, and made stronger and more rigid.

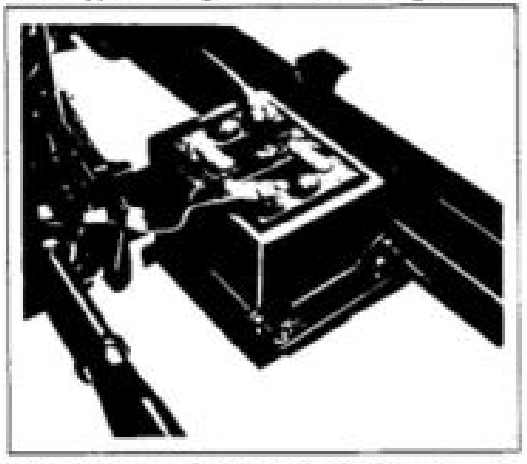
The transmission support is a sturdy, well-ribbed bracket, bolted in four places to the second cross member. A strong flanged projection of this bracket extends behind the second cross member to support the rubber of the mounting, which is the same as heretofore.

SHOCK ABSORBER MOUNTING

The mounting of all four shock absorbers is made firmer by the new, more rigid, side rail construction. In addition, a reinforcement is firmly riveted within the box section of the rail at each shock absorber mounting. This reinforcement is in the form of a steel sheet with its two ends rolled into cylinders. These cylinders, located one at each of the two holes thru which the shock absorber bolts pass, rigidly reinforce the walls of the side rail.

BATTERY HANGER

The battery hanger is very much simplified and yet is sturdier. It is mounted at the right side of the frame, directly behind the second cross member, which is its front support. Its rear support is an "L" section member, similar to a step hanger, which projects inward from the side rail to the two flanges of which it is riveted. The saddle in which the battery is cradled is suspended from two identical "L" section brackets riveted on the top of the second cross member and on top of this rear support. These brackets are formed so that pressure is exerted only on the four corners of the battery, and are equipped with holes thru which the battery clamping bolts are passed. The rear support is just flexible enough to in-



sure positive clamping of the battery. As the suspension is located lower in the frame, the saddle is redesigned with shorter suspending arms to maintain road clearance. The guard at its front also is redesigned. This, in conjunction with the protection afforded by the deep second cross member, shields the battery more effectively than before.

BODY BRACKETS

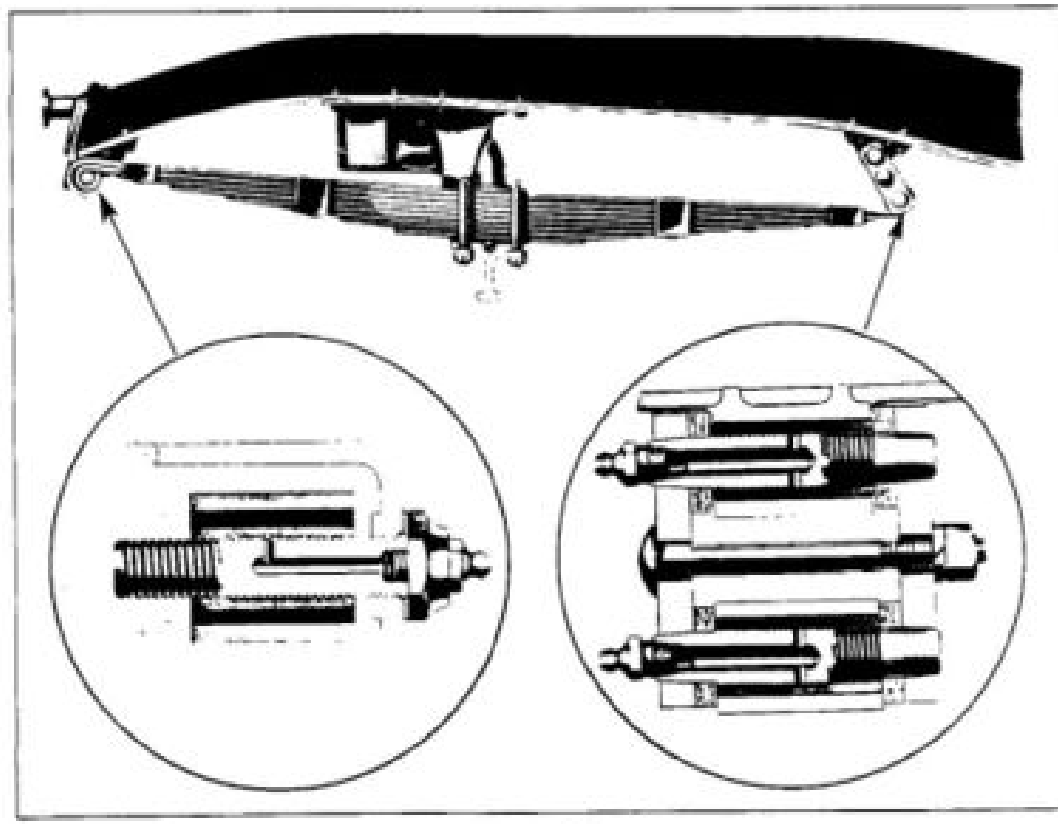
Sixteen rigid body brackets, carefully distributed around the frame, provide attachment for the body bolts. These brackets are all stronger than heretofore. Eight of these brackets, spaced between the cowl and the rear axle, four on each side of the frame, overhang the frame side rails. They are all well-ribbed, sheet metal stampings having an upper flange riveted to the top of the side rail and a lower flange which is supported by, and is riveted to, the outer flange of the side rail. Six more body brackets, mounted directly on the top of the side rails, three per side, are located at the cowl, at the rear kickup and at the rear of the frame. These are all heavy, channel section brackets riveted thru their flanges to the frame. The first two pairs of these six brackets are reinforced by heavy strip stock reinforcements within the channel of the side rails. The last two of these six brackets are integral with the rear bumper brackets. Another pair of body brackets is riveted to the top of the rear cross member between the side rails.

The distribution of these brackets spreads the body load uniformly around the frame. Their individual rigidity, reinforced by the great rigidity of the frame, makes an especially firm support for the body and increases the overall rigidity of the car, decreasing body noises which might be caused by weaving of the body on the frame. An especially rigid attachment is provided at the cowl where two body brackets are located close together on each side rail.

COMPARATIVE SPECIFICATIONS

	1935	1936
Frame type	Two side rails connected by "X" structure and 3 cross members	"Box-girder" construction. Two box section side rails connected by 3 box section cross members
Wheelbase	107"	109"
Overall car length over bumpers	179 1/2"	183 1/4" Trunk Sedans, 182 1/2" all others
Frame overall length	157 13/16"	164 7/8"
Frame width at dash	31 1/8"	33 1/8"
Frame width at rear axle	41 3/8"	46"
Frame weight	190 lbs.	195 lbs.

	1935	1936
Rivets, welds, and bolts in frame	170	860
Frame torsional rigidity	100%	112%
Frame rigidity as a beam	100%	190%
Side rail type	Channel section	Box section
Side rail depth	5 9/32"	4 1/2"
Side rail width	2 1/16" top and bottom flanges	2 1/4" box section 3 7/8" over flange
Side rail thickness	7/64"	3/32" box section 5/32" double flanges
Front cross member section	Double channel section	Double box section
Second cross member section	"X" structure of channel members	Box section
Rear cross member section	Wide ribbed channel	Box section
Body brackets and mountings	10	16



SPRINGS

The riding qualities of the 1936 STANDARD Passenger cars are greatly improved by an entirely new design of the springs and their suspension, in conjunction with the more rigid "box-girder" frame. In this new design, the frequencies of the front and rear springs are equalized to a greater extent to reduce the tendency of the car to pitch, thus producing a more evenly balanced ride. The new spring suspension is smoother and more quiet. The great rigidity of the new "box-girder" frame prevents the transmission of road shocks to the

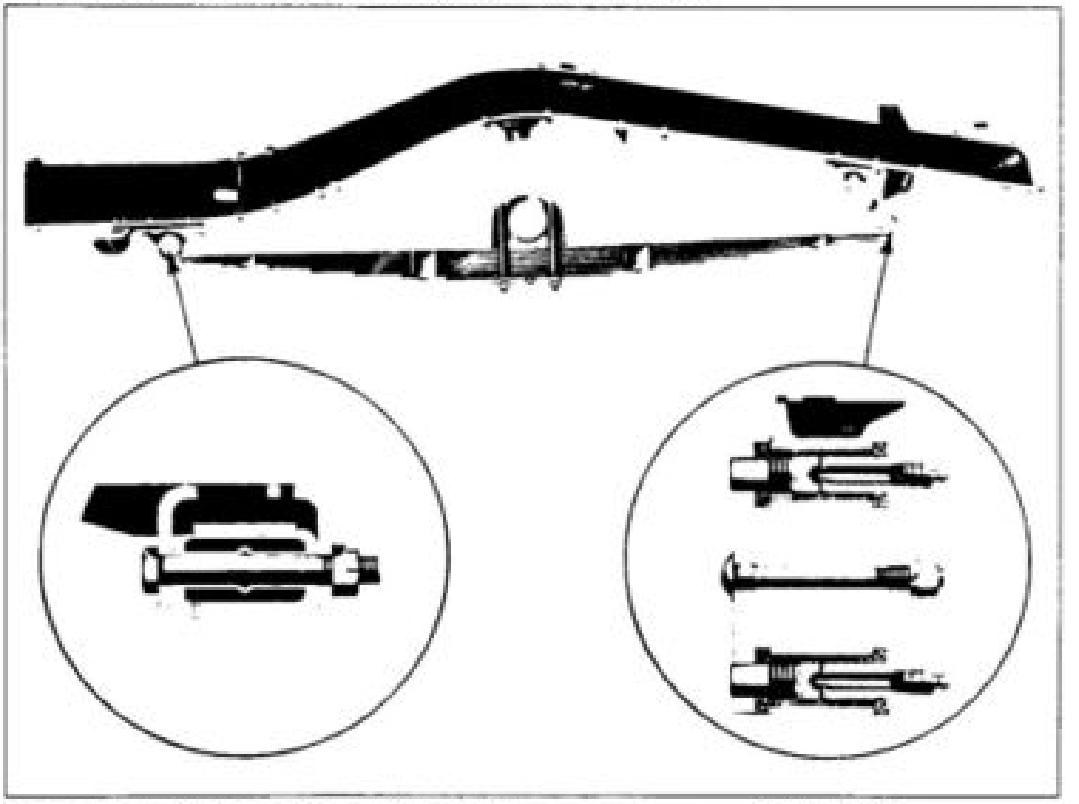
passengers. With these improvements, the new cars travel over the roughest of roads smoothly, quietly, and without vibration.

SPRING FREQUENCY

The springs of the 1936 STANDARD model are so designed that their frequencies per minute and the frequency ratio between the front and rear springs, more closely approaches the ideal for riding comfort, as recommended by authorities. The frequency of the front springs is reduced while that of the rear springs is maintained, the frequency ratio between the two being decreased to about 1 1/2 to 1 from approximately 2 to 1. This means that in the same time the rear springs move up and down once the front springs move up and down 1 1/2 times.

SPRING RATES

The frequency of a spring depends directly upon its length and its rate of deflection. To obtain the new frequency ratio, the lengths and rates of both the front and rear springs are revised. The front springs are three inches longer, with a deflection rate reduction from 315 pounds per inch to 209 pounds on all passenger cars and to 310 pounds on the Sedan Delivery. The rear springs are five inches shorter, with a deflection rate increase from 105 pounds to 112 pounds on all five passenger cars, while the deflection rates of the Sedan Delivery are increased to 123 pounds from 117 pounds. On the Business Coupe, the rear spring deflection rate is 105 pounds, as heretofore.



In comparison with the front springs of the previous model, the front springs of the new cars move more slowly in relation to the travel of the rear springs. By this means, the tendency of the car to pitch is reduced, for the spring vibrations, caused by striking an irregularity in the road, are more equal.

FRONT SPRINGS

The front springs of all passenger cars are 36" long between spring eyes, an increase of three inches. They each consist of eight thinner spring leaves, instead of seven. The ends of these leaves are drawn out in a gradual taper which more uniformly transfers

the load from leaf to leaf, decreasing the unit pressure and the tendency to squeak. Four well-distributed clinch type clips replace the three clips formerly used to prevent fanning of the leaves.

Each is twice as wide, being increased in width from 3/4" to 1 1/2" and, therefore, is more durable. The two upper spring leaves are bent at the forward end to form a spring eye of double thickness, made especially strong to resist spring windup more fully upon braking. The front springs of the Sedan Delivery incorporate all the features of the passenger car front springs with the exception of the double wall at the front spring eye. This is not necessary on the Sedan Delivery, as the spring leaves, especially the main leaf, are thicker than those of the passenger cars.

REAR SPRINGS

The rear springs of all 1936 STANDARD cars are 49" long, instead of 54". The rear springs of all five passenger cars have eight leaves of a thinner gauge than heretofore.

These are clipped together by four well-located 1 1/2" wide clips, as on the front springs, instead of by four of the narrower width. The ends of the spring leaves are curled downward, as heretofore, to prevent rubbing on the leaves above. The rear springs for the Business Coupe are the same as those for the five passenger cars except that they have seven leaves, instead of eight. The rear springs for the Sedan Delivery also are of the same design but have eight spring leaves of thicker gauge.

SPRING MOUNTING

The mounting of the new springs for the STANDARD cars is entirely redesigned to provide greater driving stability with less noise and wear.

The front springs are shackled at the rear, instead of at the front, to aid in the improved ride. The rear springs are mounted 1 9/16" farther apart to increase the car stability by reducing any tendency of the car to sway on turns at high speeds.

The front springs are attached to the chassis frame by threaded pins at the fixed ends and by threaded shackles at the rear. The rear springs are suspended from the frame by rubber encased pins at the fixed ends and by threaded rear shackles. The threaded rear shackles of both springs are of the same noiseless design which has proved so successful on the rear springs of the MASTER model.

FRONT SPRING FRONT MOUNTING

The attachment of each front spring to its horn consists of a threaded sleeve, pressed tightly into the spring front eye. A large bolt threaded thru this eye and the ears of the spring horn holds the spring between the ears. A special lock washer under the head of the bolt prevents disassembly. The hexagonal head at the outer end of the bolt is tapped for a lubrication fitting thru which lubricant is fed to the center of the sleeve through drilled passages in the body of the bolt.

SHACKLES

At each of the rear shackles of both front and rear springs, threaded sleeves are pressed into the hanger on the frame and into the spring rear eye. Threaded pins with tapered ends are screwed into the sleeves with each end extending an equal distance. The shackles are heavy gauge stampings with tapered holes fitting tightly on the tapered ends of the pins. A draw bolt, having a square shoulder under its round head, engages each outer shackle to prevent rotation of the bolt. A nut at the inner side of each inner shackle serves to draw both inner and outer shackle members up snugly on the pins. Each pin is tapped at its outer end for a lubrication fitting thru which lubricant is fed by passages in the pin to the center of the sleeve. Cork washers are assembled at each end of each pin between the shackle and the hanger or spring, to retain the lubricant in the threaded portion.

SHACKLE AND PIN ACTION

In action, the shackles, being tight on their pins, cause the pins to oscillate in their respective sleeves. Since the angular movement of both the pins in any shackle is practically the same, both screw in and out of their sleeves an equal and slight amount.

The threaded pins and sleeves used in the fixed end of the front spring and in all shackles use all of the relatively large thread surface for bearing, reducing wear to a minimum, thus insuring long life of the bearing members. The threads also serve to prevent sidewise shifting of spring eyes on turns, which was possible with plain bushings after some side wear on the eyes. With the increase in bearing surface and the elimination of oscillating movement at the tapered bearings, side sway is minimized. This also reduces wear and its attendant noise, making the action of these members silent in comparison with the pre-

vious type of shackling.
All pins and sleeves are of steel, hardened for durability, and the pins also are cadmium-plated on the threaded portion to prevent rusting.

REAR SPRING FRONT MOUNTING

The front,or fixed, ends of the rear springs are mounted to the frame by "Inlox" bushings, as on the MASTER passenger cars.These bushings each consist of rubber, moulded between two steel cylinders, an internal tube having a head rolled at its center, and a tubular outer retainer.
The bushing unit is pressed into the spring eye and clamped in the spring hanger at the ends of the inner tube. Both metal members of the unit are held securely in position. All lateral and oscillating motion is taken in the rubber, which effectively insulates the spring from the bolt and hanger. Under side loading, the lateral flexibility of the rubber relieves the spring leaves of twisting strains. With the elimination of relative motion between the metal parts, the need for lubrication also is eliminated, permitting the use of more simple spring bolts.

SPRING BUMPERS

The rubber bumpers of the rear springs are similar in design to those of the previous model, being changed only in their mounting to the frame to agree with the new rear spring centers. The rubber bumpers of the front springs are of the same graduated type used so effectively at the rear springs of the MASTER passenger cars. As in previous models, these bumpers cushion the shock when the springs deflect sufficiently to permit contact with the frame side rails. Because of their hollow, conical design, they provide a gradual and progressive build-up of resistance to vertical frame movement throughout their initial compression. They eliminate shock when the springs deflect fully to bumper position. The bumpers are assembled on top of their springs in steel retainers which are clamped to the springs by the spring "U" bolts.

SHOCK ABSORBERS

The shock absorbers,with the improved springing, dampen rebounds to a velvety smoothness. They are of the same design as in previous models, but are changed slightly in construction and valving to agree with the new springs.

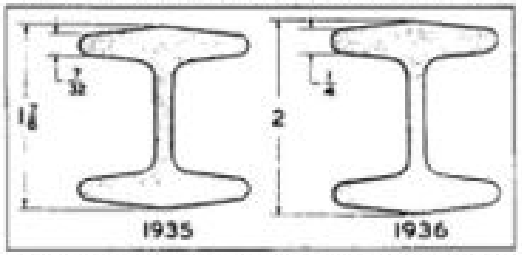
COMPARATIVE SPECIFICATIONS

	1935	1936
Frequency ratio:		
Full load	2.09 to 1	1.85 to 1
Curb load	1.76 to 1	1.40 to 1
Average	1.93 to 1	1.52 to 1
Front spring length	33"	36"
Rear spring length	54"	49"
Front spring deflection rates:		
Passenger cars	315 #/in.	209 #/in.
Sedan Delivery	315 #/in.	310 #/in.
Rear spring deflection rates:		
Five passenger cars	105 #/in.	112 #/in.
Sedan Delivery	117 #/in.	123 #/in.
Front springs - number of leaves	7	8
Coupe - rear springs - number of leaves	8	7
Front spring leaf ends	Square and curled	Tapered
Front spring clips	3	4
Spring clips size	3/4" wide x 5/32" thick	1 1/2" wide x 3/32" thick
Front spring eye - passenger cars	Plain	Wrapped
Front spring shackle location	At front	At rear
Front spring attachment to spring horn	Self-adjusting, taper seated shackle	Threaded, hardened ....steel bolt and sleeve
Front spring attachment to spring hanger	Bronze bushed steel pin	Threaded shackle .....
Rear spring attachment at front eye	Bronze bushed steel pin	Rubber
Rear spring shackle type	Self-adjusting, taper seated shackle	Threaded shackle
Front spring rubber bumper	Solid	Hollow graduated type

FRONT AXLE

FRONT AXLE I-BEAM

The front axle I-beam of the STANDARD cars is over nineteen percent stronger to further prevent bending in case of accident. This is accomplished by an enlargement in the sectional area of the beam between the spring seats. The section is now two inches high, an increase of 1/8", and has thicker upper and lower flanges. This portion of the beam between the seats is shifted 2-7/16" to the rear, so



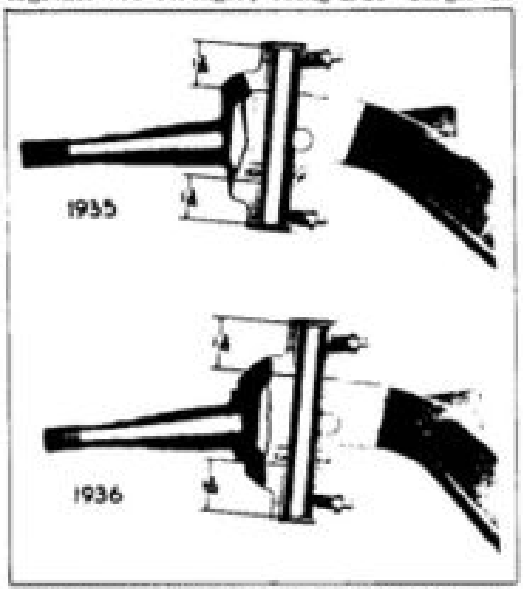
that it clears the front cross member of the new "box-girder" frame, thus permitting the maintenance of the proper front spring travel.

KING PIN AND BUSHING

The life of the king pins and their bushings is increased by an enlargement of almost twenty percent in the bushing area. The upper and lower bushings of each pin are lengthened 3/16", with a corresponding 3/8" increase in the pin length. The steering knuckle bushing bosses are lengthened to agree with the longer bushings and pin and to provide a space between each end of the pin and the welch plugs enclosing the knuckle bore. These spaces act as a passage between the two oil grooves of each bushing and facilitate filling the grooves with lubricant when servicing.

STEERING KNUCKLE ATTACHMENT

The four bolts which attach each steering knuckle, steering arm and brake flange plate together are stronger, being 1/16" larger in



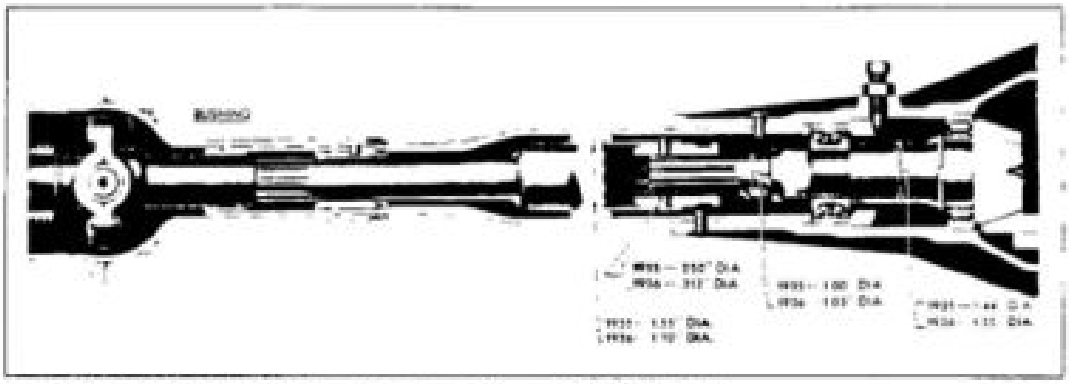
diameter. They are located farther apart, the distance between the front and rear pairs being increased from 2-5/8" to 3-1/8". These changes provide a much more rigid assembly of all three pieces and reinforce the brake flange plate to a greater extent.

COMPARATIVE SPECIFICATIONS

	1935	1936
Axle rigidity as a beam	100%	119%
Axle I-beam height	1-7/8"	2"
Axle I-beam flanges thickness at edge	7/32"	1/4"
Axle I-beam location	1" ahead of spring seat centers	1-7/16" behind spring seat centers
Bushing circumferential wearing area	2-1/2 sq.in.	2-7/8 sq.in.
Bushing length	1-3/32"	1-9/32"
King pin length	4-7/16"	4-13/16"
Steering knuckle attaching bolts diameter	3/8"	7/16"
Steering knuckle attaching bolts spread-front to rear	2-5/8"	3-1/8"

REAR AXLE

The drive from the universal joint to the rear axle is redesigned for greater durability and to transmit the engine power more smoothly. This is accomplished by an increase in the diameters of the spiral drive pinion and propeller shafts, by a stronger connection of these



two members and by the introduction of a bushing at the torque tube front end. In addition, the axle is changed to conform with the new spring centers and the rear brakes.

Hyatt roller bearings of a new "barrel-type" design are used as differential bearings, replacing the ball bearings previously used. These bearings have a unique quality, in that their capacity increases as the load increases.

REAR AXLE DRIVE

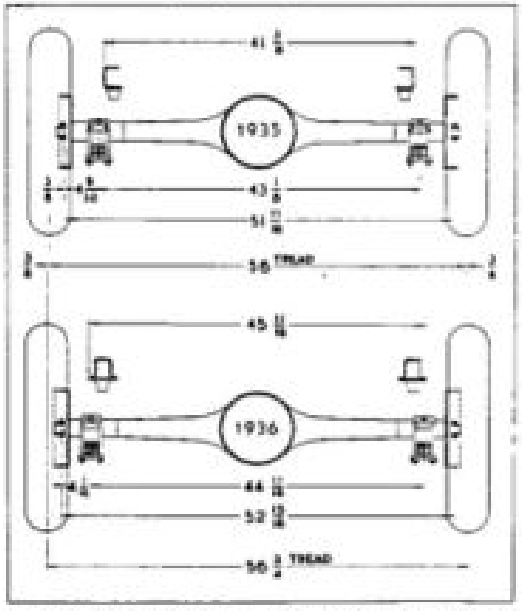
The entire shaft of the spiral drive pinion from the pinion bearing forward is enlarged an average of 5/64" in diameter for greater durability, while the tube of the propeller shaft is stronger and more rigid, being increased 5/32" in diameter. The coupling pin which connects these two shafts likewise is increased from 1/4" to 5/16".

Both the propeller shaft and the torque tube are lengthened to compensate for the longer wheelbase, the increase of the torque tube being more than that of the propeller shaft to permit it to overhang the universal joint rear yoke to a greater extent. A hardened bronze bushing, one inch long, pressed into the extreme forward end of the torque tube at this point, serves as a bearing for the universal joint rear yoke. With the propeller shaft forward bearing, it maintains the alignment of both the joint and the propeller shaft and reduces to a minimum the tendency of these members to "whip" at high speeds, thus decreasing wear, noise and vibration.

CAR STABILITY

The stability of the car is increased, especially when making turns, as the wider body and frame and the greater spread of the rear springs reduces its tendency to lean outward when turning and to sway when rounding the straighter road.

On the rear axle, the spring seats are mounted farther apart to agree with the new spring centers. At the same time, the wheels, wheel bearings and brakes are relocated. In the new design, each spring seat is located 17/32" closer to its respective wheel bearing which is now in line with the center of the brake. The shorter distance between each spring and its wheel bearing tends to increase the axle housing rigidity by further decreasing any tendency of the housing to bend in this distance. Thus the proper alignment and function-



ing of the mechanism supported in the housing is assured and wear and noise decreased. The location of the wheel bearing in line with the brake tends to improve braking.

COMPARATIVE SPECIFICATIONS

	1935	1936
Spiral drive pinion shaft diameter	1.44"	1.55"
Spiral drive pinion forward bearing seat diameter	1.103"	1.181"
Spiral drive pinion forward bearing retaining nut thread diameter	1.065"	1.148"
Spiral drive pinion spline diameter	1.00"	1.03"
Pinion and propeller shaft coupling pin diameter	.250"	.313"
Propeller shaft tube diameter	1.55"	1.70"
Propeller shaft overall length	47"	51 1/2"
Torque tube overall length	47 7/16"	52 13/32"
Torque tube front bushing	None	Hardened bronze
Rear spring seat centers	43 1/8"	44 11/16"
Rear wheel bearing centers	52 7/16"	52 13/16"
Rear brake centers	51 11/16"	52 13/16"

BRAKES

The hydraulic brake system of the 1936 STANDARD passenger cars incorporates all the design features and advantages of the 1936 MASTER passenger car brakes, with but few differences. These differences are, for the most part, structural, and are due to the variations in chassis design of the two models.

BRAKE DRUMS

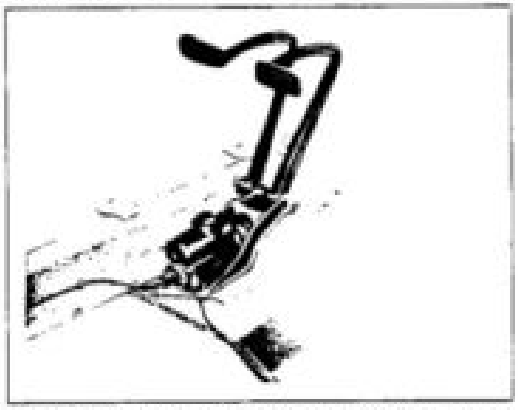
The brake drums are eleven inches in diameter, as on the MASTER, one inch more than the drums of the previous STANDARD. This increases the service braking area from 141 3/8 square inches to 158 1/4 square inches.

The drums are pressed from high grade steel, and are machined for greater accuracy. The accuracy of the front brake drum is further increased, as both the drum and its wheel hub are machined together within very close limits. The drum material is homogeneous, closer grained steel than that used before. Its composition permits machining the braking surface to an absolutely true diameter and still gives a surface that resists scoring. As the machining of the brake drums makes them perfect in diameter, there is no possibility of wheel "shimmy" being introduced at light brake applications, as is sometimes the case when the drums are slightly out-of-round.

All the mechanism within the drums is identical with that of the MASTER, with two exceptions. The front wheel cylinder is adjusted through the brake flange plate, instead of through the drum, and the semi-moulded STANDARD brake linings have a different coefficient of friction. The new brakes are equipped with dirt shields which are now used for the first time on STANDARD cars. Minor changes are made in the front and rear axles at the wheel hubs for the adaptation of the new brakes.

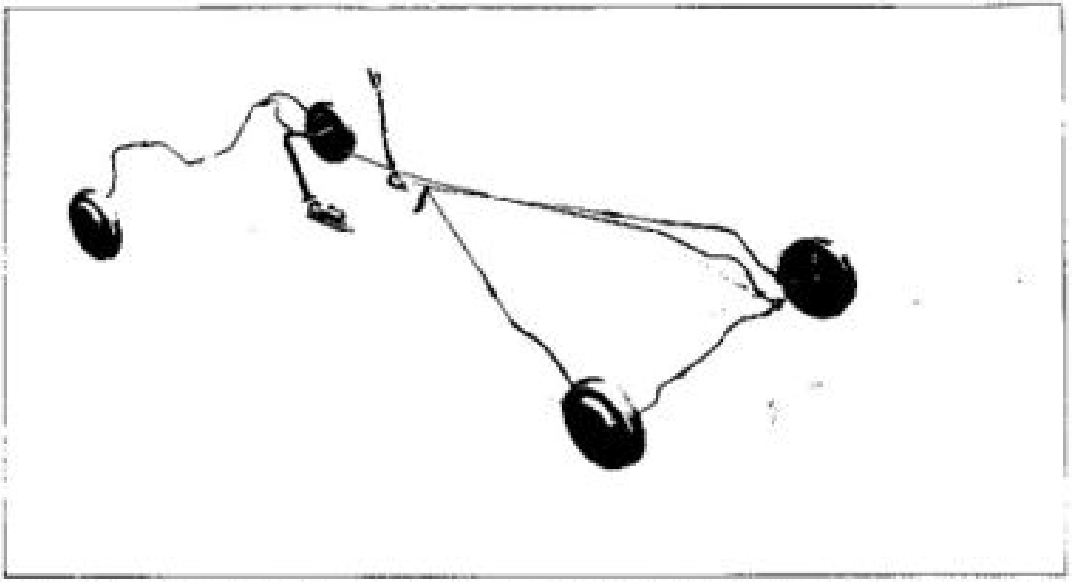
MAIN CYLINDER

The brake main cylinder is identical with that of the MASTER model, and incorporates the same hydraulic stop lamp switch and brake pedal stop. As on the MASTER, this cylinder and the brake and clutch pedals are mounted together on a rigid, cast malleable iron bracket. This bracket, in turn, is mounted on the support, which extends to the left side rail from the frame second cross member. Two studs from the main



cylinder project through both bracket and support to clamp the entire unit in place.

Both the brake and clutch pedals are redesigned in the same way as on the MASTER to agree with their new support. In this new arrangement the clutch yoke offset rod is lengthened to maintain the clutch pedal pressure and to make a more smooth clutch manipulation. The clutch pedal stop is controlled by a rubber



block attached in a metal case to the lower side of the toe board. The previous stop which controlled both clutch and brake pedals is discarded.

FLUID PIPES AND CONNECTIONS

Because of the great difference between the "box-girder" and "X" frames, the location of the pipe lines is different on the STANDARD frame than on the MASTER. The main pipe line extends from the main cylinder across the frame along the rear of the second cross member to a "T" connector attached to the right side rail. From the "T", two pipes extend fore and aft on top of the inner flange of the rail. At the rear axle kick-up, the rear pipe is joined to a flexible hose leading to the rear wheel cylinders through pipe lines on the rear axle as on the MASTER model. The connection at the forward end of this hose is supported by a sturdy frame bracket. The line extending forward joins a "T" connector on the top of the frame side rail at the front cross member. A flexible hose extends from one branch of this "T" to the right wheel cylinder. From the other branch, a pipe clipped on top of the front cross member joins a connector on the left side rail. To this, the flexible hose leading to the left wheel cylinder is attached. All pipes and connectors are similar in construction and of the same materials as those on the MASTER. The hoses are identical. Altogether, there are only eighteen feet of pipe clipped to the frame at eleven places and joined together and to the hoses by five connectors. As on the MASTER, every precaution is made to protect these parts from injury.

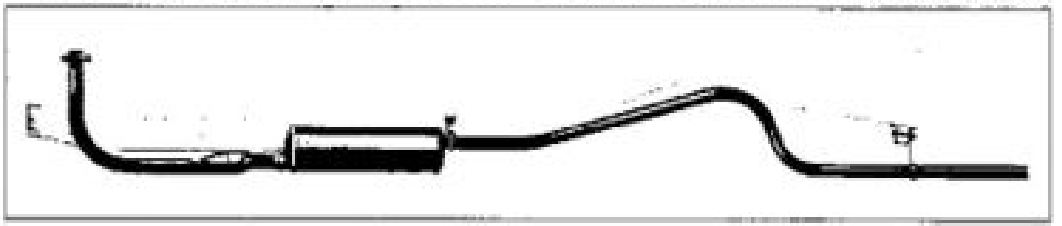
HAND BRAKES

The hand brake system is mechanical. It operates the two rear wheel brakes by pull rods and cables which cause the linkage within the brakes to function. The cables and the linkage within the brakes are identical with those of the MASTER. From the cables to the brake lever, the design is special for the STANDARD. The hand brake lever and sector are bolted to a massive stamped steel support of "L" section, which, in turn, is bolted at three places on top of the second cross member. An extension from this support projects beyond the rear of the cross member to form a pivot mounting for a single, long idler lever of stamped steel. A pull rod connects the hand brake lever to this lever near its top. Just above this connection, two long pull rods, one on each side of the lever, are joined by a single pin of large diameter. From the idler lever, the two pull rods spread in the shape of a "V" to brackets in the side rails just ahead of the kick-up, where they are joined to the brake cables. These brackets are strong stampings, riveted to the side rails. They rigidly clamp the casing of the cables, preventing movement. The cables then pass through both walls of the side rail box section to join the rear brakes.

A metal shield around each guides it thru the rail. Just ahead of the connection of each rod to its cable, a spring hooks into a slide hole on the rod by formed nibs. The other end of the spring hooks into the side rail near the bracket. The tension of these springs returns the pull rod linkage to released position and prevents rattling of the linkage.

COMPARATIVE SPECIFICATIONS

	1935	1936
Service brakes type	4 wheel mechanical	4 wheel hydraulic
Hand brake type	4 wheel mechanical	Mechanical at rear wheels
Brake shoe construction	2 pieces, face and web welded together	1 piece, face and web integral
Brake shoe actuation	By cam turning on roller sector	By piston in wheel cylinder
Limited articulation	Reverse shoes only	Forward and reverse shoes
Brake shoe guides	Guides from anchor plate straddle shoe web	Conical spring noses shoe edge against guides on brake flange plate
Brake drum size	10"	11"
Brake drum material	Pressed steel	Homogeneous steel, pressed & machined
Brake lining effective area	141-3/8 sq.in.	158 1/4 sq.in.
Brake drum mounting	Inside hub flanges	Inside hub flanges
Brake dirt shield	None	Continuous ring
Brake flange plate diameter	12 1/4"	13 3/16"
Wheel cylinder size	None	Front 1 1/8"-Rear 1 1/16"
Brake shoe adjustment	By turning brake cam	By turning adjusting wheel at wheel cylinders
Brake main cylinder size	None	1" dia.
Brake main cylinder mounting	None	Integral with brake and clutch pedals
Service brake linkage adjustments	Five	One at pedal
Stop lamp switch operation	Mechanical linkage	Hydraulic
Hand brake linkage	Mechanical cut-in on service brakes	Mechanical-operating toggle linkage in two rear wheel brakes
Hand braking area	141 3/8 sq.in.	79 1/8 sq.in.
Hand brake cross shaft diameter	1 1/8"	None



EXHAUST SYSTEM

The suspension of the exhaust system in the STANDARD cars is very much simplified. The mountings are designed with just enough flexibility so that vibration set up in the system is not transferred to the frame and body. The exhaust system itself, is revised to conform with the new mountings and the new frame. The inlet, outlet and reversing tubes of the exhaust silencer are relocated; the exhaust pipe is reshaped; and the tail pipe is lengthened for the longer wheelbase and body.

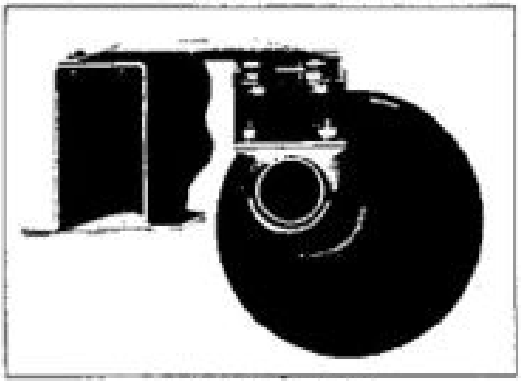
SILENCER SUPPORT

The silencer is suspended from a sturdy frame

bracket of "U" section attached to the top of the "box-girder" frame side rail by two rivets. It extends within the frame to just above the joint of the tail pipe to the silencer. Two sleeve nuts, welded in the bracket at this inner end, form the attachment to the support bracket, a channel section member.

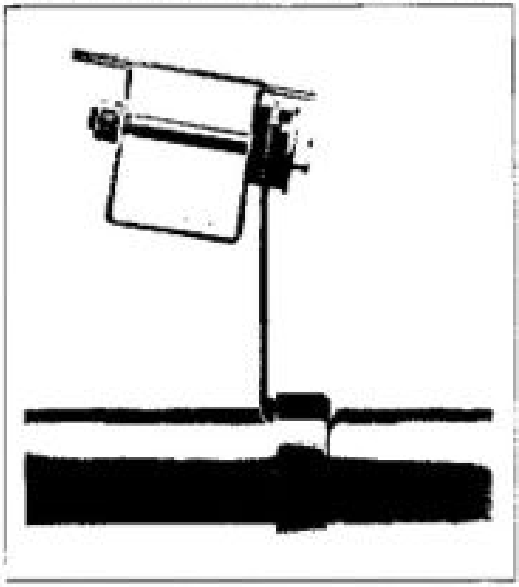
Two rubber grommets are carried in the upper flange of the support bracket. They slide over the sleeve nuts and are clamped to the frame bracket by a large plain washer, a shoulder bolt and a lock washer.

The joint of the silencer and tail pipe is connected to the lower flange of the support bracket by means of a saddle clamp and "U" bolt of the same type as on the previous model.



TAIL PIPE SUPPORT

The tail pipe is suspended from the rear cross member by a more simple support. The tail pipe clamp is constructed and welded to the support bracket in the same manner as before. The support bracket is a simple strip steel stamping, with a grommet pressed in its upper end, which is identical with those used at the silencer



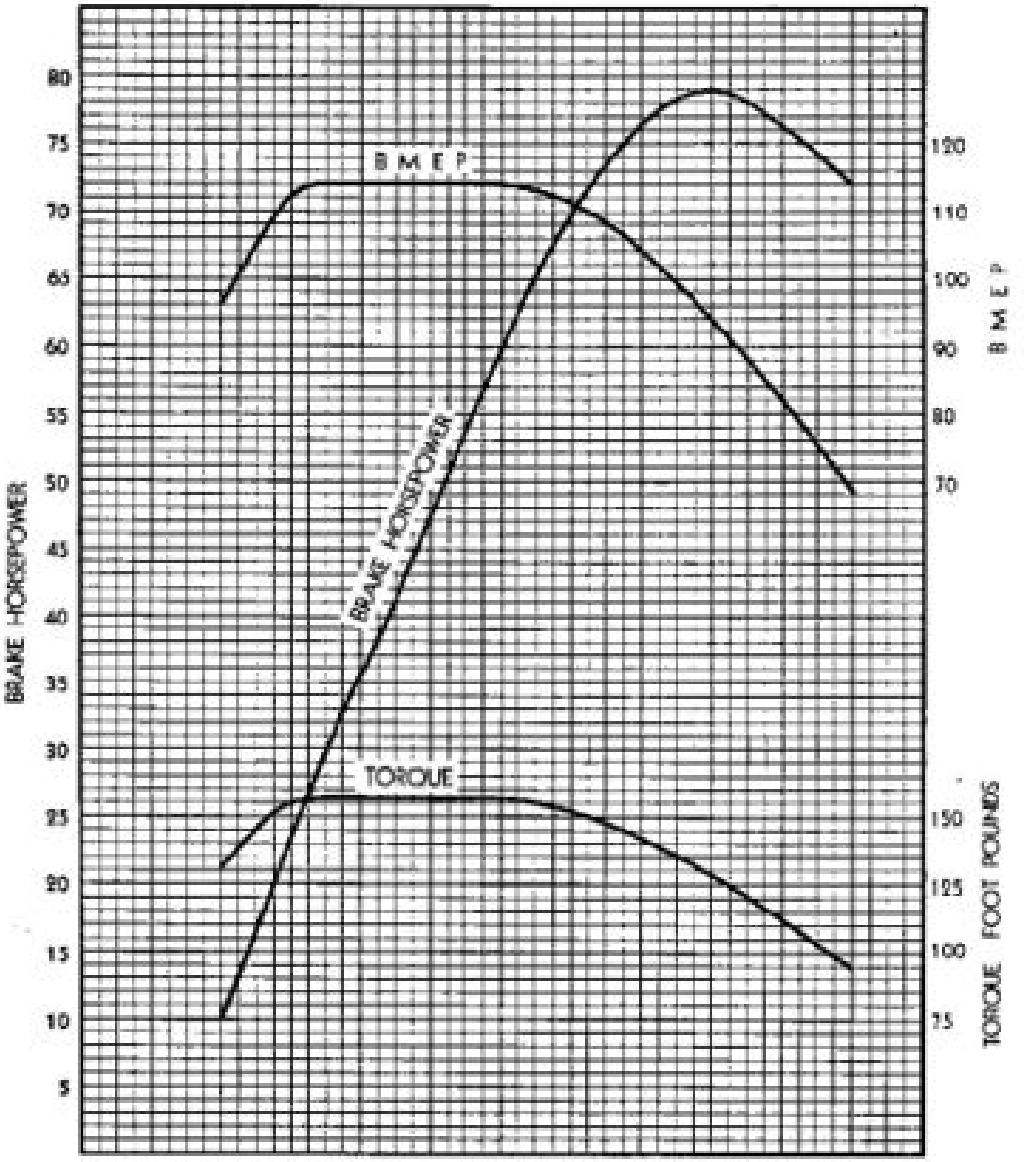
support. It contains twice as much rubber as the one used before. The support bracket and grommet are retained to the rear cross member by a long shoulder bolt, which extends entirely through the box section of the member. A large, plain washer and a lock washer under the head of the bolt support the rubber and lock the connection.

COMPARATIVE SPECIFICATIONS

	1935	1936
Tail pipe length	65 1/8"	79 3/8"
Silencer support	Thru bracket and grommet to web of sub-frame gusset	... Thru bracket & two grommets to frame side rail
Tail pipe support grommet size	7/16" thick x 1 1/8" dia. with 5/8" hex.hole	1/2" thick x 1 1/8" dia. ....dia.with 13/32"dia.hole

ENGINE

The basic engine of the 1936 STANDARD passenger cars is identical with that of the 1936 MASTER passenger cars. It incorporates all of the new design features described in the MASTER section of this book. These are the 'Blue-Flame' cylinder head, with 6 to 1 compression ratio, "balanced" carburetor, "round-nose" camshaft, full-length water jackets around the cylinders, more rigid crankcase with rifle-drilled oil passage, crankcase ventilator baffle, stronger oil pump drive mechanism, counterbored exhaust valve guides and the more durable 133 tooth flywheel ring gear. The clutch, as on the MASTER engine, has "shot-blasted" disc cushion springs and more accurate release lever alignment. In addition to these features, the 1936 MASTER radiator core is used to make cooling of the engine more efficient. The frontal area is 365 square inches, sixty square inches more than the previous STANDARD core. With the new water jackets and this larger core, the cooling system



POWER AND TORQUE

capacity is increased to fifteen quarts. All of these improvements result in increased fuel and oil economy, more power, more efficient cooling, with lower oil temperatures, and much greater durability.

As on the MASTER models, the engine is governed to confine its greater power to a maximum speed, which insures long car life with excellent performance.

The engine develops 30 horsepower at 1000 RPM, 60 horsepower at 2000 RPM and reaches its peak of 79 horsepower at 3200 RPM. The torque reaches a maximum of 156 foot pounds, which is developed through a speed range from 900 RPM to 2000 RPM. The 1935 power, torque and BMEP are shown in chart form on the preceding page.

COMPARATIVE SPECIFICATIONS

	1935	1936
Maximum horsepower at RPM	74 at 3200	79 at 3200
Horsepower at 1000 RPM	29	30
Horsepower at 2000 RPM	57.5	60
Maximum torque	150 ft.lbs.	156 ft.lbs.
Engine RPM at maximum torque	1000 to 2000	900 to 2000
Compression ratio	5.6 to 1	6 to 1
Carburetor float chamber vent	To atmosphere	To air horn
Carburetor air horn attachment	2 screws	3 screws
Carburetor idle port	One slot	Two punched holes
Oil pump rotor shaft diameter	1/2"	9/16"
Oil pump rotor pin diameter	5/32"	3/16"
Distributor shaft tang width	9/64"	3/16"
Oil pump set screw taper diameter	7/32"	5/16"
Exhaust valve guide counterbore	None	.362" dia.x 1/4" deep
Crankcase ventilator baffle	None	Sheet metal
Radiator core section	305 sq.in. of .20"x.55" copper	365 sq.in. of .25"x .55" copper
Cooling system capacity	10 quarts	15 quarts
Inlet manifold ports diameter	1 1/4"	1 5/32"
Valve rocker cover gasket pieces	Stapled together	Dovetailed & stapled
Valve spring pressure- valve open	104 lbs.	98 lbs.
Oil distributor body gasket	Paper,-.030" thick	Cork,-.055" thick
Flywheel ring gear teeth	132	133
Starter gear ratio	14.66 to 1	14.78 to 1

TRANSMISSION

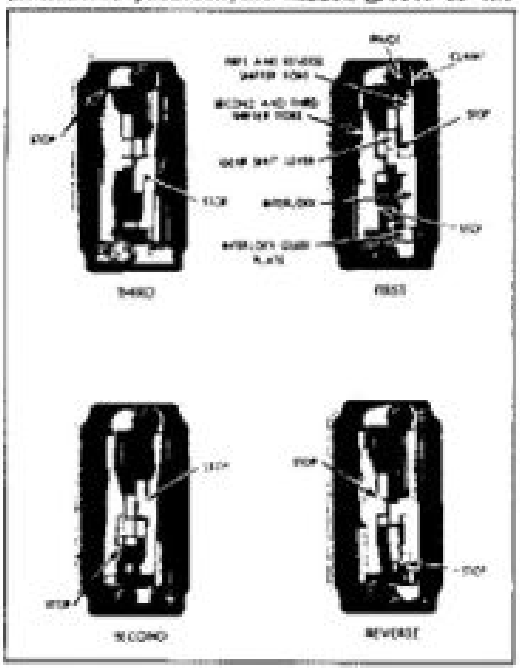
In the STANDARD transmission, shifting is accomplished more smoothly and with greater ease, due to an entirely new rail type shifting mechanism. An interlock, added to the transmission, precludes all possibility of two different gear sets being engaged at one time. The rail shift is similar to that of the MASTER transmission. Two round shafts or rails, mounted parallel to each other, extend fore and aft above the gears and are retained to the top of the transmission case by stamped clamps at either end. They are prevented from turning by flat surfaces, machined where their ends contact the top of the case and by the clamp bolts which engage notches cut into the side of each shaft. Forged shifter yokes, replacing the former stamped yokes, are shifted on their respective shafts, as on the MASTER transmission, to engage the various sets of gears. As on the MASTER transmission, when each shift is completed, a ball within the shifter yoke, moved by a detent spring, engages one of a series of notches in its shaft to hold the yoke in position. With rail type mechanism there is much less friction in the moving parts than in the former plate type mechanism, and thus the shift is made more easily and smoothly.

The interlock is simple in construction and consists of two steel stampings, welded together. These are the interlock proper and the interlock guide plate. The guide plate is a long, flat lever, located above the shifter yokes and rails. It is pivoted at its forward end on the same clamp bolt which retains the shafts and is guided at its rear end by a washer under the head of the other clamp bolt and by an integral projection which contacts the top of the rear clamp. A long, round slot in the middle of the guide plate provides

clearance for the fore and aft movement of the gearshift lever.

The interlock proper, welded to the bottom of the guide plate, incorporates a series of stops, which lock the fore and aft movement of the shifter yoke not selected.

In neutral position, the milled groove of the



two yokes and the gearshift lever end are in line at the center of the transmission.

When shifting into first speed, the gearshift lever is engaged with the first and reverse shifter yoke, moving the guide plate sidewise so that an ear of the interlock engages a lug projecting above the second and third speed yoke. At the same time, the clearance hole in the guide plate is aligned parallel with the first and reverse shifter rail.

The shift is then made, the engagement of the ear and lug preventing the second and third shifter yoke from moving forward. When the shift is completed, further movement of the first and reverse yoke is stopped by contact of the gearshift lever with the forward end of the clearance hole in the guide plate.

When shifting into second speed, another ear of the interlock engages a lug of the first and reverse shifter yoke to prevent it from moving to the rear. A third ear, depressed at the rear of the interlock, stops the second and third yoke from further travel when the shift is completed.

When shifting into third speed and into reverse, proper engagement of the correct yokes and limitation of the yoke movement is accomplished in a similar manner, as shown on the above illustration. Thus in all speeds there is no possibility of two trains of gears being engaged at any time.

In addition to the above feature, other changes are made in the STANDARD transmission. The gearshift lever is curved in a shape similar to that of the MASTER to provide sufficient hand clearance in the new bodies.

A boss with a tapped hole is provided on the right side of the transmission rear bearing retainer to provide an attachment for the ground strap of the battery, which is now grounded directly to the power plant. The two bosses provided on each side of the transmission case for the mounting of the hand brake lever of STANDARD models previous to 1935 are removed, as they are no longer necessary.

COMPARATIVE SPECIFICATIONS

	1935	1936
Gearshift mechanism	Sliding plates stamped integral with shifter yokes on round rails	Forged shifter yokes on round rails
Gearshift interlock	None	Stamped steel

FUEL SYSTEM

FUEL TANK

The fuel tank of the STANDARD models is identical with that of the MASTER. It has a capacity of fourteen gallons, three gallons more than the tank of the previous STANDARD models. The new tank consists of two identical stampings of thick terne plate, seam-welded face to face. Each is a shallow pan with large, spherical corners, and a wide flange around its open face for welding. When welded together, the flanges of the two pans form a rigid reinforcement around the entire tank, preventing longitudinal bending, which might open seams and allow fuel to leak. All forming strains which might affect the tank rigidity are eliminated by the shallow draw and the large corners of the pans. Further rigidity is provided by five equally-spaced, depressed ribs, extending from

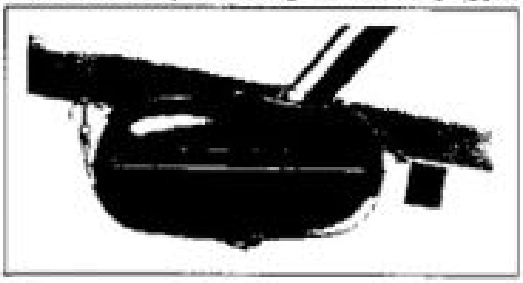
the front to the rear of each pan.

FUEL GAUGE

The float of the fuel gauge tank unit is located directly in the center of the tank. In this position, it is less affected by road conditions and, therefore, provides more accurate and sensitive registration of the fuel.

FILLER NECK

As on the MASTER models, a variety of filler necks are used, according to the body type.



All necks are sweated to the left side of the upper pan, and two screws are used for locating the neck and assisting this joint. One type of neck is used for the Sedan and Coach; a longer neck is used for the Business Coupe; and, a combination, two-piece neck is used for Town and Sport Sedans, due to the built-in trunk at the rear of these cars.

On the Sedan, Coach and Business Coupe, the neck extends through the rear panel of the body to a high and accessible position at the side of the spare tire. On the Town and Sport Sedans, it comes out at the left side of the trunk. On these two cars, the filler neck proper extends through the floor of the tire compartment below the trunk, at which point a heavy sponge rubber seal prevents the entrance of dirt and water. It is joined a short distance above the floor to an extension, which is curved to come out at the side of the trunk. The two parts of the neck are held together by a threaded coupling, in which a cork seal is provided to prevent fuel leakage. On all cars, as heretofore, a large rubber seal insulates the neck through the body panel and covers the hole through which the neck emerges.

FUEL TANK MOUNTING

The fuel tank fits between the new third and rear cross members of the chassis frame. Two sets of steel bands, one at either end, suspend it from these members. Each set of bands consists of an upper strap, which is hooked at each end into a hole in the cross member, over the top of the tank. The lower strap, which is the supporting member of the two, is hooked into a hole in the rear cross member. Its forward end incorporates a trunnion nut, over which the strap is folded. A bolt through the third cross member engages this nut to draw the tank upward, clamping it

firmly between the two straps. This open mounting allows air to circulate around the tank to keep the fuel cool, removing the possibility of vapor lock.

COMPARATIVE SPECIFICATIONS

	1935	1936
Capacity	11 gallons	14 gallons
Fuel gauge location	At extreme right	At tank center
Fuel tank construction	Wrapped, seamed body with separate tank ends	Two shallow pans welded together
Reinforcing ribs	None	Reinforcing flange & 5 depressed ribs around tank
Fuel tank suspension	Below massive rear cross member	Between third and rear cross members

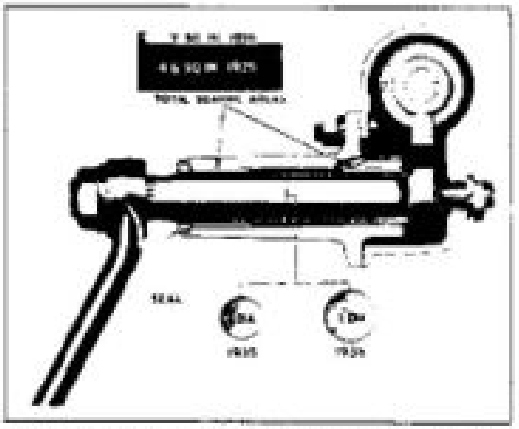
STEERING

Improvements throughout the steering mechanism of the STANDARD model provides better steering control and increase the life of the mechanism.

PITMAN SHAFT AND BUSHINGS

The pitman shaft and its bushings are enlarged 1/8" in diameter and the bushings are each lengthened 1/4". The larger diameter of the

shaft increases its torsional strength over fifty percent, adding considerably to the safety in driving. The larger bushings present a bearing surface to the shaft, which is over



fifty percent greater, thus improving the shaft alignment and increasing the life of both shaft and bushings. A cork seal, encased in steel, is pressed into the end of the shaft housing around the shaft, to prevent the entrance of dirt and grit. This seal also prevents oil from leaking from the housing.

STEERING GEOMETRY

A better balance of steering effort is accomplished by new steering geometry. The pitman arm is relocated in relation to the steering worm, equalizing to a greater extent the pitman arm travel for right and left turns. Previously, a greater amount of travel was provided to the left, which meant that more steering effort was required when making a right turn. To accomplish this result, the lengths of the pitman arm, the steering arms and the steering connecting rod were revised, while the steering tie rod is shortened so that it will clear the brake flange plates of the new brakes. These changes result in a slight change in the overall steering reduction, which further reduces the steering effort.

COMPARATIVE SPECIFICATIONS

	1935	1936
Pitman shaft diameter	7/8"	1"
Pitman shaft bushings area	2.3 sq.in.	3.8 sq.in.
Pitman shaft bushings length	7/8"	1 1/8"
Pitman shaft seal	None	Cork
Steering wheel turns for right turn	1.36	1.45
Steering wheel turns for left turn	1.73	1.65
Overall steering reduction	16.24 - 1	16.52 - 1
Pitman arm length- center to center	5 7/8"	6 5/16"

WHEELS

The wheels, furnished as regular equipment on all of the STANDARD passenger cars, are of an attractive steel spoke type, very similar to those of the MASTER Sedan, Town Sedan and Sport Sedan.

WHEEL DISC

The wheel disc (the central portion of the wheel which includes the hub and spokes), is stamped from one sheet of heavy gauge steel. It consists of a massive hub from which fourteen short and sturdy spokes project outward. These spokes are stamped in the disc at an angle from the hub to the center of the rim, so that they appear to be separate from the hub, while actually they are integral with it. They serve as sturdy ribs which strengthen the hub, while opposed stamped ribs, caused by the convolutions of the spoke formation, add strength. The hub, itself, is in the form of a spherical curve which includes the hub cap. The central por-

tion of the hub is depressed into a bowl shape, through the bottom of which attachment is made to the axle hub by strong bolts. Spaced radially around the walls of the bowl between the bolts are five leaf spring clips, firmly riveted in the hub. These are used to attach the hub cap in a manner very similar to that on the MASTER Passenger cars.

The wheel disc is securely riveted to the wheel rim through projections formed in the end of each spoke, making a strong, neat and attractive assembly.

The wheels for each car type are painted a single color, which harmonizes with that of the car and effectively sets off the hub cap, accentuating its size.

HUB CAP

The hub cap is redesigned to conform with the contour of the wheel and the new method of fastening to the hub. It is moved 3/4" closer to the wheel center, its new position providing greater protection from injury caused by gravel thrown by the wheel.

The large black ring is removed from the visible portion of the cap. This leaves a smooth, chrome-plated contour, decorated only by the attractive, blue Chevrolet monogram upon a depressed pebbled background at the center of the cap.

COMPARATIVE SPECIFICATIONS

	1935	1936
Wheels type	Wire wheels	Steel-spoke wheels
Number of spokes in wheel	40	14
Hub cap crown to tire center	4 1/2"	3 3/4"

WHEEL CARRIER

There are three different methods of carrying the spare wheels on the 1936 STANDARD cars. These are similar in design and construction to those on the MASTER, except for slight variations, due to the different chassis and wheels. On the new Sport and Town Sedans, the spare wheel is carried in a compartment under the trunk at the rear of the car. On the Sedan, Coach, and Business Coupe, the spare wheel is carried outside at the rear of the car, as heretofore. On the Sedan Delivery, the spare wheel is carried in the right fender well, while fender wells are also available as special equipment for the left fender on the Sedan Delivery, for both right and left fenders on the Business Coupe and, also, on the trunk Sedans, should the owner wish more trunk space. It is not available, however, on the Sedan and Coach.

TRUNK SPARE WHEEL CARRIER

On the cars with built-in trunks, the spare wheel is carried, in the same manner as on those of the MASTER line, in a compartment below the luggage space. The wheel rests flat upon the compartment floor, which is a continuation of the steel underbody. Here it is held rigidly against the front wall of the compartment by two heavy ribbed brackets, bolted by single bolts into the floor at the rear. In this position, the wheel is not provided with a hub cap, thereby saving extra operations when changing wheels. A large hole in the luggage space floor permits inflation of the tire when the wheel is clamped in place.

REAR WHEEL CARRIER

The external wheel carrier at the rear of the car is redesigned to locate the wheel in its best appearing position on the respective body types. The carrier is incorporated in the rear structure of the body, so that the weight of the spare wheel is now supported indirectly by the frame, instead of being supported directly on the frame rear cross member. A large, strong bracket of stamped steel is added between the body rear panel and the new steel underbody. Bolts through this underbody connect the bracket to the third and rear cross members of the frame. The external portion of the carrier is bolted on top of this bracket through the body rear panel.

FENDER WELL WHEEL CARRIER

The fender well wheel carrier is of the "swivel" type, similar to that of the MASTER, except for the I-beam support bracket from the frame. This is of a slightly different shape, due to the differences in the chassis frames. This carrier is a great improvement over the former STANDARD carrier, in which the wheel was clamped in the well by a visible saddle clamp exerting pressure on the tire. It is stronger, neater in appearance, and more convenient.

In the new design, a strong, malleable iron brace, bolted to the frame side rail, extends to the well. A large support, consisting of

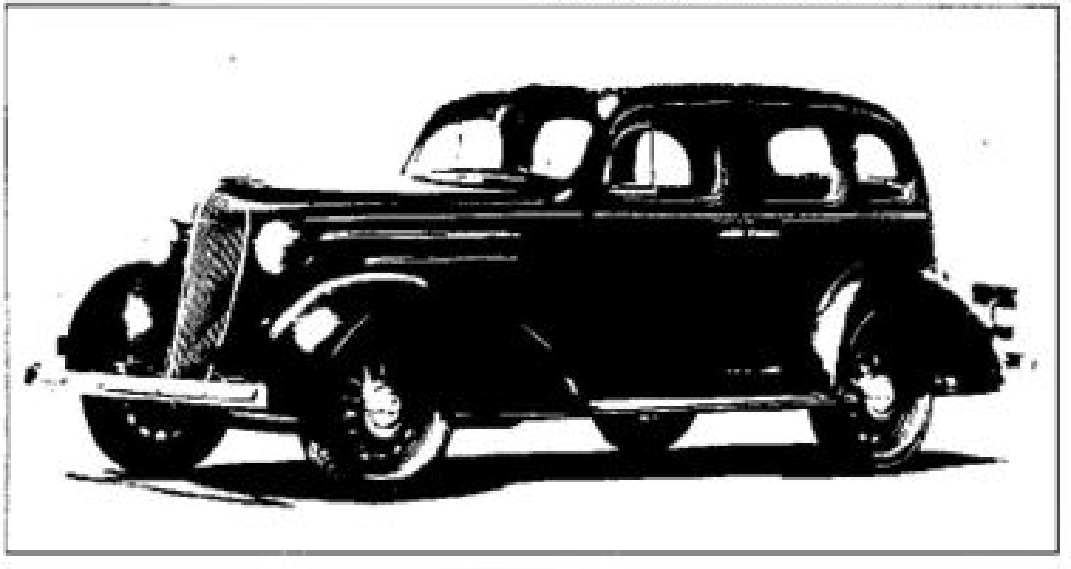
two strong stampings bolted together, is mounted on top of this brace. A projection from the support is formed to fit under the well which it braces, while two ears formed near the top of the support are bolted to the side wall of the well. Two stamped steel brackets, located in the well, support the wheel through the tire, keeping it from resting directly on the floor of the well. This permits the draining of any water which may get into the well and allows the free circulation of air around the tire for quick drying in case it becomes wet.

From the support in which it is firmly held, a chrome-plated steel tube extends upward through the fender behind the wheel, where it is not easily seen. A lock screw between the well and the support prevents removal of this tube, while a rubber grommet insulates the tube from the fender. A large, malleable iron bracket, hinging on the upper end of the tube, forms the attachment for the wheel hub. The wheel hub is fitted onto a pilot on the bracket, to which it is clamped by three bolts. The bracket is held to the vertical tube by a heavy pin in its body which engages a large clearance slot in the tube wall.

A chrome-plated "T" handled clamp, having an integral screw, screws into the top of the tube, forcing the bracket downward to clamp the wheel and tire securely and rigidly in the well. The removal of the wheel is easily accomplished by loosening the "T" clamp, removing the three wheel hub attachment bolts and slipping the wheel from the pilot on the bracket, after which the bracket is swung to the rear, where it is out of the way. The wheel is then lifted from the well.

COMPARATIVE SPECIFICATIONS

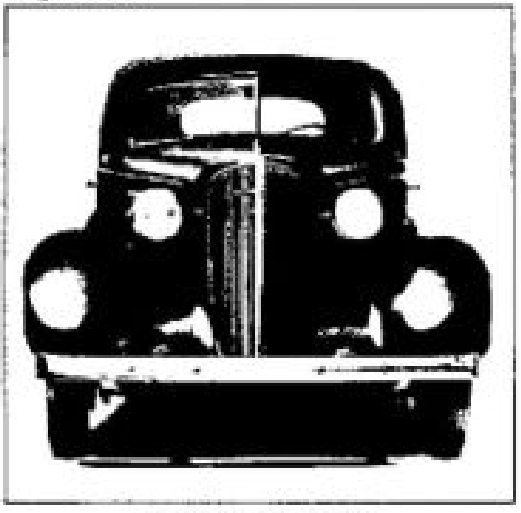
	1935	1936
Trunk spare wheel carrier	None	In compartment below trunk
Rear wheel carrier support	Frame	Body and frame
Fender well wheel carrier	Wheel clamped in well by visible saddle clamp	Wheel on swivel clamped in well by hidden "T" clamp



SHEET METAL

The sheet metal of the new STANDARD model is identical with that of the 1936 MASTER passenger cars, with but few minor exceptions. The MASTER styling, which proved so popular during the past season and which has been greatly improved for 1936, makes these new cars truly modern and far more attractive in appearance than any other car in the STANDARD price class. In comparison with the cars in the previous STANDARD line, the appearance of these cars

is wonderfully improved. Every line, from the new and attractive radiator grille through the tails of the rear fenders, enhances the car appearance, accentuating its length and speed. The new features blend with the graceful "Turret-Top" bodies in the same harmonious unity that characterizes the new MASTER Passenger cars.



RADIATOR AND GRILLE

The frontal appearance of the car is entirely redesigned. The radiator and hood are raised one inch higher, creating an appearance of greater strength. The head lamps, more streamlined than before, are mounted directly to the sides of the radiator shell, as on the MASTER. The narrower MASTER chrome-plated vertical bar grille, framed by a narrow chrome-plated edging, is mounted much higher in the shell and arches gracefully, both horizontally and vertically.

As on the MASTER, a very attractive and individual moulding follows the apex of the grille. With the brilliant "V" grille, it offsets the new, attractive Chevrolet insignia, mounted higher on the body of the grille. At its widest point, at the top of the radiator, the same streamlined ornament as on the MASTER replaces the former radiator filler, now located under the hood. With the filler in this position, there is less possibility of damage to the finish of the shell and hood, which might be caused by the overflow of water and anti-freeze solution. The arching grille and the shell, which is much deeper, give the radiator profile a much smoother sweep into the hood.

HOOD

The hood is longer and extends back from the radiator with more vertical side panels. Due to shallower hood and fender valleys, the side panels are shorter and therefore more rigid. The hood hinge is the same chrome-plated double hinge used on the MASTER. Two streamlined louvres of distinctive design decorate each side panel, replacing the former three louvres. These are of two different lengths, the longer being located above. The upper portion of each protrudes and is depressed along its edge into a "V" section, which is attractively striped with paint of a color contrasting with that of the hood. The lower portion is depressed into the side panel. This treatment is so accomplished that the protruding and depressed portions beautifully counterbalance one another.

The lower edge of the hood side panel follows the contour of the shallower valley. This edge is plain, without any exterior moulding, rigidity being provided by a flange turned inward. The rear corner is much more rounded, to prevent chipping of the cowl when opening the hood. The rubber bumpers at the front and rear corners are less noticeable, being almost completely hidden by the panel. The rib in the side panel reinforcement is deeper in section, to provide even greater side panel rigidity. The hinge moulding on the side of the hood is raised two inches, to maintain a uniform height in relation to the greater hood length.

The single catch handle for opening the hood is located farther to the rear for greater accessibility and extends farther away from the panel to make opening easier. Its outer end is hooked to give a more secure grip for the hand. With this handle, there is less possibility of the hand slipping and being injured on the louvres. The handle is painted in the hood color.

FENDERS

Both the front and rear fenders are of the same design as those on the MASTER passenger cars. Smartly streamlined, they lengthen the appearance of the car. The forward portion of each fender follows the contour of the wheel, continuing past the wheel center in a long concave arc, which terminates abruptly at the height of the running board. The side walls of each fender blend from a rounded section ahead of the wheel into a parabolic curve which progressively flattens, producing a definite impres-

sive line at the crown and causing the tail of the fender to end in a point. The fender valances are deeper, with a straight lower edge and much sharper corners, covering more of the wheel and chassis. The bead around the lower edge of each fender is narrower and of uniform width.

FRONT FENDERS

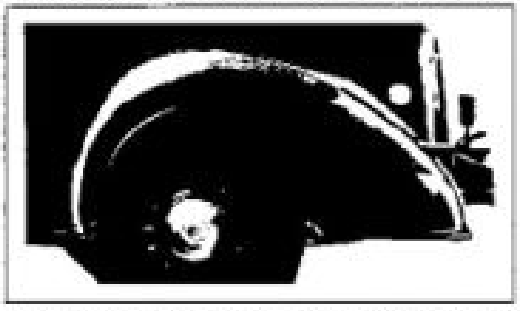
The crown of each front fender is deeper and, with the deeper valance, hides more of the chassis. In addition, the nose of the fender extends lower, to completely hide the wheel and chassis mechanism from a front view. The fender blends more smoothly from its sharper crown in a clean, unbroken contour into a shallower valley between it and the hood. The front spring horn, which extends beyond the nose of the fender, is concealed by a neat, cylindrical cover, like that on the MASTER Conventional model.

The skirt between the fenders and the frame is deeper, to completely seal the engine compartment from mud and water and is more rigid.

REAR FENDERS

Each rear fender hugs the body more closely, the body above the wheel extending to the center of the crown. From this point to the tail of the fender, both the body and the fender curve inward toward the center of the car. As they curve, the edge of the body and the increasingly sharp crown line gradually diverge. The sharp crown line ends in the pointed tail of the fender, which extends approximately nine inches farther to the rear than on the previous model. The tapering effect of the body and fenders, with the longer fender tail, creates a pronounced effect of fleetness, increased length and beauty. The crown and valance are increased in depth, to cover more of the underbody and to give the appearance of greater car weight. A rod is used, instead of a stamping, to brace the valance more rigidly from the frame.

The attachment of the rear fenders to the body is improved by a change in the method of attachment and by an increase in the number of attaching bolts from nine to eleven. Previously, the bolts were inserted horizontally through the fender and the wheel house, which made it quite difficult to draw the fender



snugly against the body. Now, the bolts are inserted vertically and are located closer to the outside of the body, allowing the fender to be drawn more snugly and more tightly to the body.

RUST PREVENTION

As on the MASTER model, the front and rear fenders and the running boards are "Cromodine" processed to prevent rust.

RUNNING BOARD

The running board is similar in design to that of the MASTER, but is shorter, due to the shorter wheelbase of the STANDARD cars. As on the MASTER model, it has the appearance of extending from wheel to wheel along the side of the car in an unbroken line, creating the appearance of greater length. It is shallower than before and is entirely flat between the fenders, whereas the former running board curved upward into the front fender. It has a sharp straight-sided outer edge, which is decorated by a stamped moulding effect. It is made stiffer by the use of two longitudi-

al depressed ribs in the body, instead of one. The appearance of great length in the running board is created by a long extension added below the front fender valance and by another extension below the forward end of the rear fender. The forward extension is rectangular in section and acts as a stif-

fening reinforcement for the front fender, which it supports. The front fender is bolted on top of this extension and the running board by seven bolts through a turned-in flange of the fender. Another bolt fastens the fender to the running board apron. The fastening to the rear fender is similar to the previous method.

RUNNING BOARD MAT

The rubber running board mat is longer and much improved in appearance. It covers the flat of the running board, extending slightly over its edge. It is shaped to fit around the pointed tail of the front fender and to follow the contours of the apron and rear fender. A raised rib forms a border around its periphery, while parallel ribs within this border extend the full length of the mat. All of these ribs are wide, of the same height and have flat tops. The spaces between ribs are corrugated with ribs of a much smaller size.

Like the mat of the previous model, this mat is vulcanized to a steel plate, which is held to the running board at many points. The fastening is improved, however, by fifty small rubber nipples, which are distended through holes in the plate to form cushions between the plate and running board.

STABILIZED FRONT END MOUNTING

The stabilized front end mounting for the radiator, fenders and head lamps is redesigned to conform to the new sheet metal and is simplified, with many pieces eliminated. The former external head lamp support bars are eliminated by a new type of construction, which permits the head lamps to be mounted directly to the side of the radiator shell without any visible tie to the fenders.

The heavy yoke, which reinforced the radiator shell, is replaced by a continuous flange, welded around the radiator core to provide improved reinforcement for the core and better support for the shell. It consists of two pieces of sheet steel that are lapped and welded together at the top and extend down each side nearly to the base of the core. These flanges are narrow at the top, widening out at the shoulders and the sides. They form an integral framework, which supports the core and to which the shell is attached.

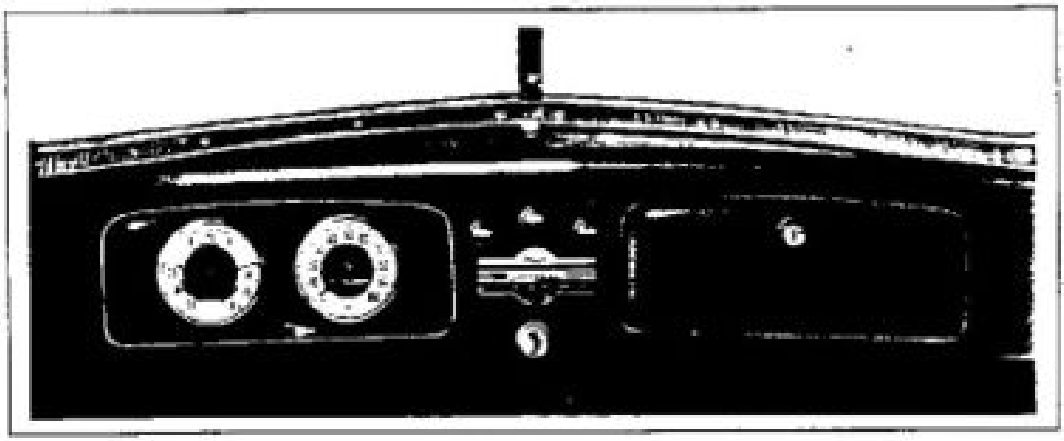
The new mounting retains the "Ram Horn" design of the previous model, reshaped to the contours of the new fenders. Large stamped steel brackets serve as a tie between the fender outer support and the side of the shell, through which they are bolted at two places each to brackets which support the radiator. The radiator support brackets also are large steel stampings. They are riveted to the side walls of the radiator shell, which they support by being bolted to the "Ram Horn".

The radiator tie bar, of similar construction to that of the previous model, is bolted at either end to flanges of these brackets. The head lamp reinforcement bracket, which is a large steel stamping, ribbed and flanged for strength and rigidity, is spot-welded to the inside of the radiator shell and bolted to the core anchor.

COMPARATIVE SPECIFICATIONS

	1935	1936
Sheet metal appearance	Conventional	MARTIN styling
Radiator	Flat "V" at an angle of 11° - straight front line	Arching "V" sweeping from top to bottom-17° approx
Radiator grille width at shoulders	17 3/4"	15 1/2"
Radiator grille width at bottom	15 3/4"	11 3/4"
Head lamp mounting	On bar between fender and radiator	On side of radiator
Radiator ornament	On filler cap	Separate
Radiator filler location	At top of radiator	At left side under hood
Radiator shell depth	3 7/8"	6 3/8"
Radiator height above frame	28 15/16"	30 5/8"
Rear of hood above frame	29 15/16"	31 5/8"
Grille and hood hinge moulding width	7/16"	1 3/8" at top of radiator 3/4" at bottom of grille and at cowl
Hood hinge type	Single continuous	2 concealed piano hinges

	1935	1936
Hood hinge treatment	Painted	Chrome-plated
Minimum depth of hood side panel	12 1/2"	10 5/8"
Maximum depth of hood side panel	22 5/8"	18 5/8"
Hood louvres per side panel	3	2
Hood louvre length	Upper- 32 3/8" Center-23 1/8" Lower- 14 13/16"	Upper- 34 7/8" Lower- 26 7/8"
Hand space under hood latch handle	1 5/16"	2 5/16"
Hood latch handle end	Curved	Hooked
Front fender crown depth at wheel	4 27/32"	5 3/4"
Max.height of hood ledge above frame	10"	12 5/8"
Rear fender tail behind rear axle	27 1/4"	36"
Running board length	48 1/16"	79 1/4"
Running board design	Curved into front fender	Flat extends under fender valance
Running board edge	Rounded	Small radii
Running board insulators	Anti-squeak	50 rubber nipples
Running board total depth	2 5/8"	1 3/4"
Running board length at center	43 7/16"	46 3/8"
Radiator core reinforcement	Four short integral flanges at sides of core and "U" shaped top reinforcement	Continuous integral flange around sides and top of core



INSTRUMENTS

INSTRUMENT PANEL

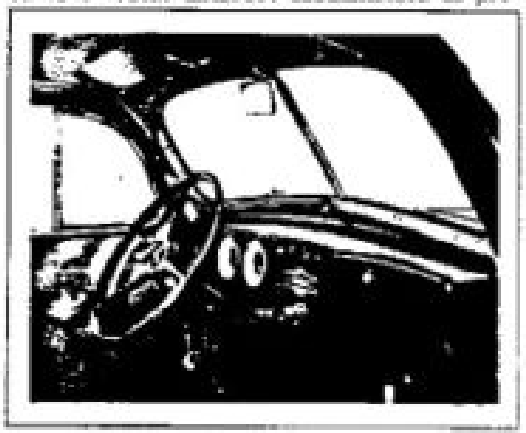
The STANDARD instrument panel is entirely new and is very similar in appearance and construction to that of the MASTER model. The instruments are attached in two groups on a panel of modified rectangular shape, raised from the main panel directly in front of the driver.

A glove compartment is added at the right side of the main panel and is covered by a door of the same shape as the raised portion upon which the instruments are mounted. The glove compartment door, the instrument carrier panel and the main panel are painted in a dark metallic gray, which harmonizes with the upholstery, hardware and window mouldings.

INSTRUMENTS

The dials of the two instrument groups are large and of the same size. The speedometer is located in the right dial, while the ammeter and the fuel and oil pressure gauges are grouped radially in the one at the left. The figures upon the dials are larger and therefore more readable. As on the MASTER, they are colored jet black upon a contrasting ivory background. A large, black target at the center of each dial directs the eyes to the figures, facilitating

reading. The pointers of all instruments, except the speedometer, are colored red, which causes them to stand out sharply against their lighter backgrounds. The pointer of the speedometer is black with red markings. Small red circles at the center of each dial add a decorative touch. Indirect illumination is pro-



vided by three bulbs at the back of the panel. These are located- one in the center and one outside of each instrument. Their light shines through windows of clear pyralin and is distributed equally over the dials.

Each dial is framed by a narrow chrome-plated rim of "U" section. The two instrument groups are attached separately to their panel, in the same manner as those on the MASTER.

CONTROLS

The controls are the same as those on the MASTER model and are located in the same places at the center of the main panel. The ignition lock is low on the panel and is separated from the triangular grouping of the throttle, light, and choke controls by the same decorative plate used on the MASTER panel. The windshield wiper control is located above these on the top of the panel at the apex of the "V" of the new windshield. This location is much more convenient than the former location in the header of the windshield.

GLOVE COMPARTMENT

The glove compartment, of the same design as on the MASTER, is 4 3/4" long, 14 3/4" wide and 9 1/2" deep. Its sturdy walls are lined with soft felt and are covered by a water-proof fabric. The compartment door is a rigid pressed steel panel with a heavy steel reinforcing back and hinges from the bottom to form a small shelf when open. Its knob is black with a chrome-plated lock.

COMPARATIVE SPECIFICATIONS

	1935	1936
Instrument location	At center of panel	In front of driver
Glove compartment	None	At right side
Provision for mounting radio controls	None	Removable plate at panel center
Windshield wiper control location	Above windshield	At instrument panel
Instrument attachment	On common carrier	Separate
Instrument panel finish	Black with walnut mouldings	Dark metallic grey
Instrument carrier panel finish	Walnut grain	Dark metallic grey
Control buttons finish	Dark brown with ivory figures	Jet black with ivory figures
Instrument finish	Dark brown figures & targets on ivory background; light brown pointers	Black figures and targets; red pointers

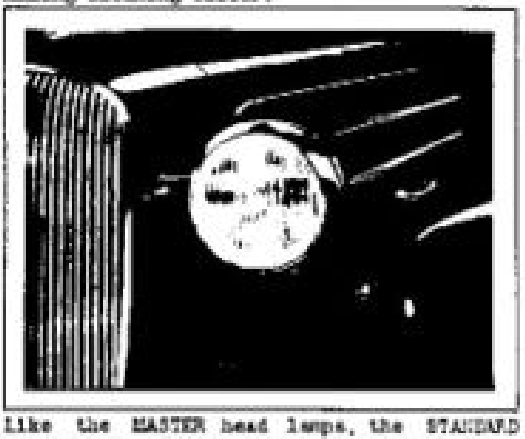
ELECTRICAL

HEAD LAMPS

The head lamps are identical with those on the MASTER Passenger car, except for finish and for the bulbs, which remain of the same capacity as heretofore. The bodies are black enameled with chrome-plated rims, instead of being entirely chrome-plated. This is quite a departure from the design of the previous STANDARD, for the lamps are over two inches longer, one inch smaller in diameter and are more gracefully shaped to harmonize with the new sheet metal.

They are attached to each side of the radiator shell by stream-lined brackets, identical with those on the MASTER. The new mounting is neater and more simple; all wires

are concealed in the brackets, and the valleys between the hood and fenders are unbroken, improving their appearance and making cleaning easier.



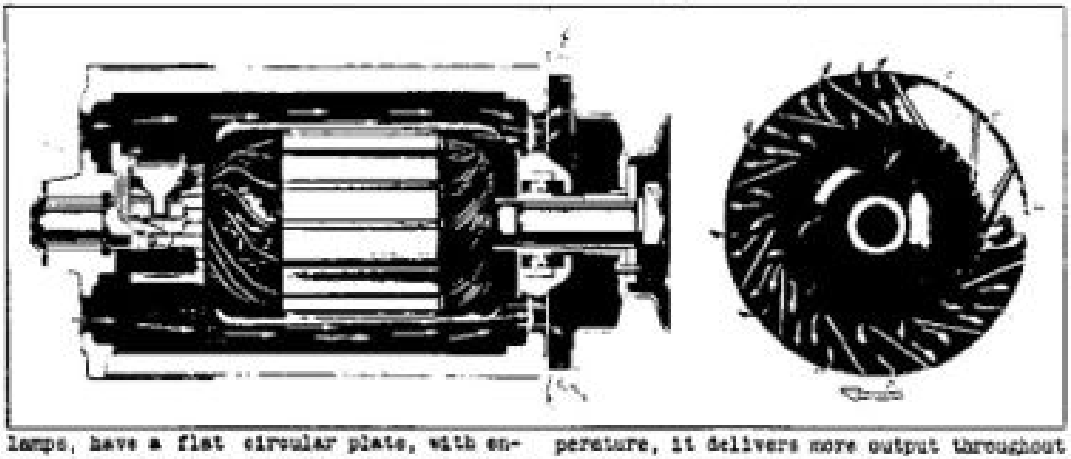
Like the MASTER head lamps, the STANDARD are of the "Tiltray" type with reflectors having five distinct sections. Each section is scientifically designed to contribute its share to the optically correct vertical distribution of light. The lens, which is more convex than before, is divided into three sections, to spread the light horizontally to the best advantage. These features, combined with prefocused bulbs, increase the efficiency of the light output. The prefocused bulbs, new on the STANDARD, but used for several years in the MASTER head lamps, have a flat circular plate, with engagement slots located very accurately in relation to the filaments. This permits the establishment of a definite and accurate focal length in the manufacture of the bulb and eliminates the necessary for adjusting the focus after the head lamps are assembled. The bulbs are held in the reflectors by three small pins, which project thru the flat at the apex of the reflector and engage the slots in the bulb collar. The unsymmetrical spacing of the three pins insures proper positioning of the bulbs.

The double filament bulb functions, as heretofore, with the lower filament located in relation to the reflector, so as to give a driving beam down the road. The upper filament is in such a relation to the reflector as to throw the beam downward just ahead of the car for city driving. Separate bulbs for parking are provided, as heretofore.

VENTILATED GENERATOR

The generator is ventilated, providing more efficient operation and increased safety from burning out.

Both front and rear bearing plates of the generator are provided with vent holes which permit the passage of air thru the generator, while a centrifugal fan with carefully-spaced blades is mounted just behind the pulley at the forward end. In operation, the fan draws air from the rear to the front of the generator, cooling all of its mechanism. The generator temperature becomes stabilized about eighty degrees above that of the atmosphere, so that under normal operating conditions there is no possibility of its burning out. Since the generator operates at a lower temperature, it delivers more output throughout the speed range.

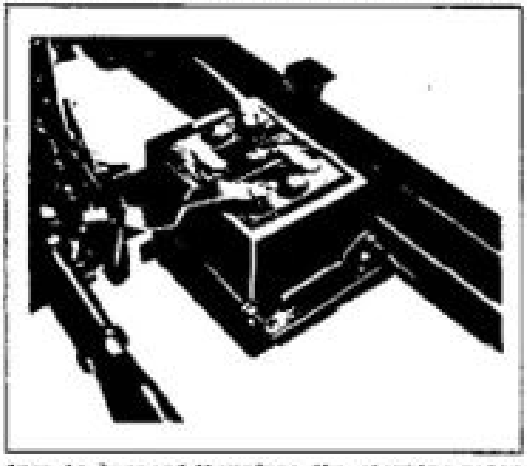


BATTERY GROUND CIRCUIT

The battery is located farther forward, due to the new structure of the frame and its

method of grounding is improved and simplified. The battery is now grounded directly thru its ground strap to the transmission rear bearing retainer, instead of thru the frame structure to the power plant. By this means, the number of circuit joints is decreased to two. Formerly, there were six--one at the battery, four thru the frame sub-frame structure and another which completed the circuit to the power plant.

Cold weather starting is improved by this decrease, since each joint causes a slight voltage drop. With only two joints, the voltage



drop is less and therefore the starting motor cranks the engine at higher speeds.

Due to the new battery location, the ground strap is twice as long as before and the starting cable from the battery to the starting switch is shortened.

TAIL AND STOP LAMP

The tail and stop lamp is identical with the MASTER and is mounted on the left rear fender on all body types in the same manner as the MASTER.

In comparison with the previous STANDARD, the lamp body is of a new shape which blends into that of its support. The glass at the stop lamp bulb is reshaped into a circular lens, while the remainder of the glass face is moulded with reflex markings. This design provides more reflex lens area, increasing safety if the lamp should happen to be out, as it reflects more light from the head lamps of cars approaching from the rear. The name Chevrolet is etched attractively across the middle of the lens.

The bulb which lights the license plate is located within the lamp and is protected by a glass window in the lamp body. Like the MASTER, a bracket added to the back of the lamp body supports the wires.

The tail lamp bracket, identical with that of the MASTER, is a great improvement over the former vertical bracket of the STANDARD. It is a die-casting smoothly streamlined in contour and is securely attached to the fender from which it projects horizontally to the rear.

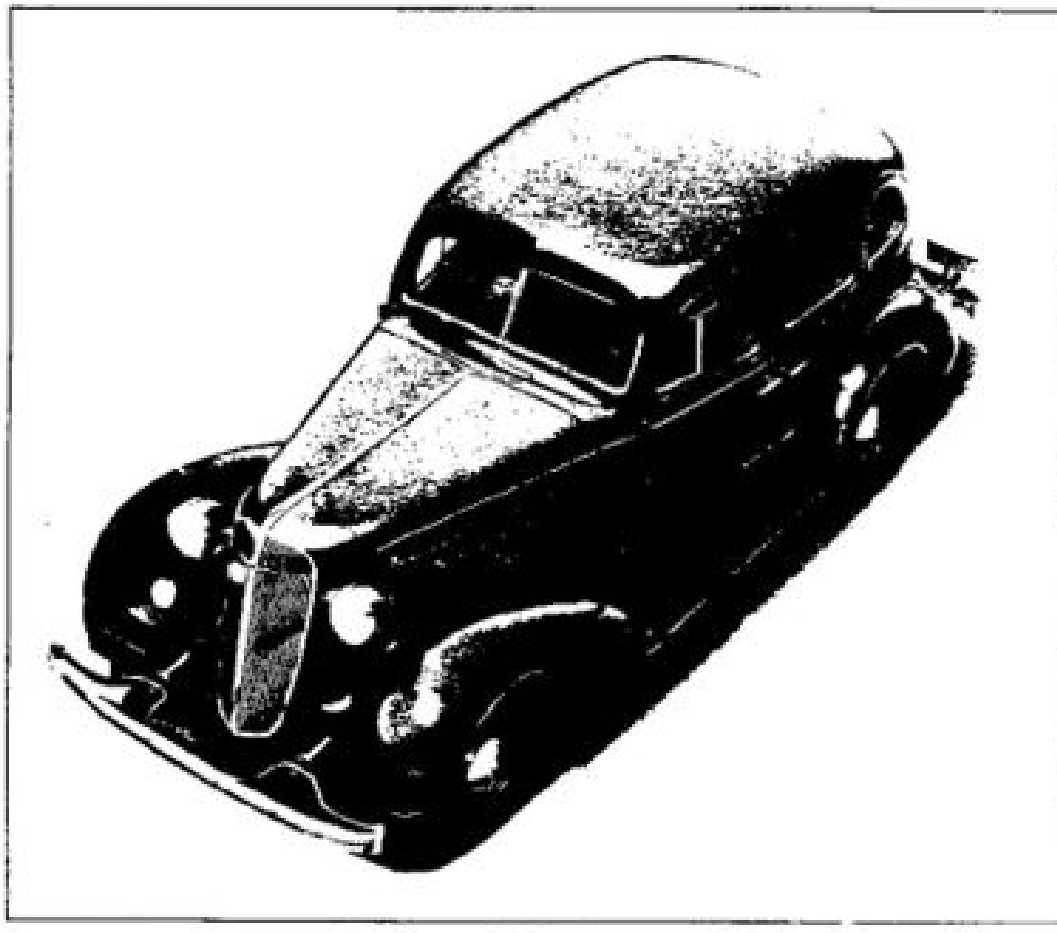
LICENSE PLATE SUPPORTS

The MASTER license plate support, projecting vertically from this bracket, clamps the rear license plate, providing a much sturdier support than before, as the plate is held both at the top and bottom, instead of the bottom only.

The front license plate is supported by the same strong bracket as the MASTER, which is clamped in the same manner to the front bumper rear outer bar, to support the plate from its lower edge.

COMPARATIVE SPECIFICATIONS

	1935	1936
Head lamp length	7 3/4"	8 7/8"
Head lamp diameter	9 1/8"	8 3/16"
Head lamp mounting	On tie bar to fender	To sides of radiator shell
Head lamp type	Twilite	Filtray
Head lamp bulb type	Two pin bayonet	Prefocused
Head lamp lens convex radius	12"	4 7/8"
Head lamp wires	Visible	Concealed in support
Tail and stop lamp lens reflex glass	On tail lamp portion only	Over entire surface except for stop lamp lens
Tail and stop lamp bracket	Vertical bar attached to bumper	Horizontal streamlined bracket from fender
Rear license plate attachment to bracket	Bolted	Bolted & clamped
Generator type	Not ventilated	Ventilated
Joints in battery to ground circuit	6	2



BODIES

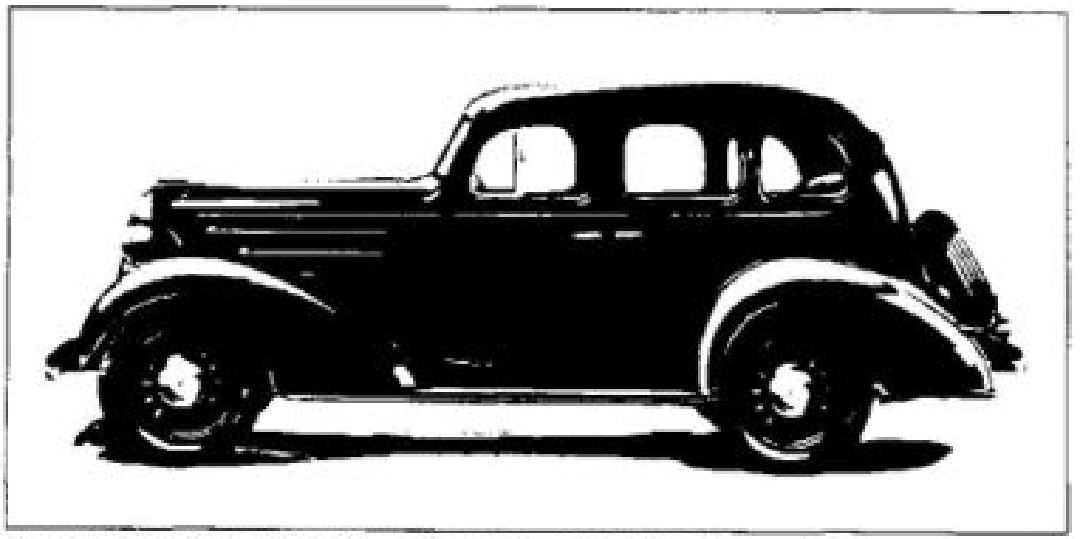
The 1936 line of STANDARD bodies provides a choice of seven distinct styles: the Sedan, Sport Sedan, Town Sedan, Coach, Business Coupe, Cabriolet and the Sedan Delivery. The Cabriolet and the Town and Sport Sedans are additions to the line.

In the following description, the enclosed passenger types are first described together, followed by separate descriptions of the Cabriolet and Sedan Delivery.

All of the enclosed passenger car bodies are identical with like types in the MASTER line, except for their length, which is 3 1/2" shorter, due to the shorter wheelbase and their interior treatment. These bodies are improved in all ways over those of the previous model. They are more beautiful, larger, more strongly constructed and more comfortable.

APPEARANCE

In appearance, these bodies are the most attractive in the STANDARD price class. The windshield is of windstream "V" design, accentuated by a chrome-plated bar at its center and is slanted at a much greater angle. The "V" is continued from the windshield into the front of the roof, where it merges into the roof surface. The smooth, solid steel "turret-top", free from unsightly mouldings and more arched in contour, merges into the sides, rear panel and windshield with more rounded, gracefully sweeping curves. The sides of the body arch in greater curvatures, both vertically and horizontally. The windows, with more rounded corners, harmonize in design with the streamlining. The doors, reshaped with more rounded upper corners, extend much lower. The



neat and attractive belt moulding, broad at the doors and narrow at the hood and rear quarter panel, accentuates the length of the car. The appearance treatment at the rear differs in the various body types. On the Sedan and Coach, the rear panel sweeps from the roof in an arching unbroken contour at a greater angle than heretofore, to end abruptly a short distance below the top of the rear fenders in an attractive tail upon which the spare wheel is mounted. On the Town and Sport Sedans, a trunk, embodied in the rear panel, has the same styling of well rounded corners and arching lines as the rest of the car. The roof contour of the Business Coupe flows in smooth arching streamlines into a long graceful rear deck, which gives a decided effect of length and fleetness.

SIZE

The bodies are longer, the distance between the dash and the rear window being increased over three inches and are three inches wider between the center pillars at the belt line, with width increases of 1 1/2" at the front and rear pillars. There is more leg room in the front seats and more head room in the front and rear.

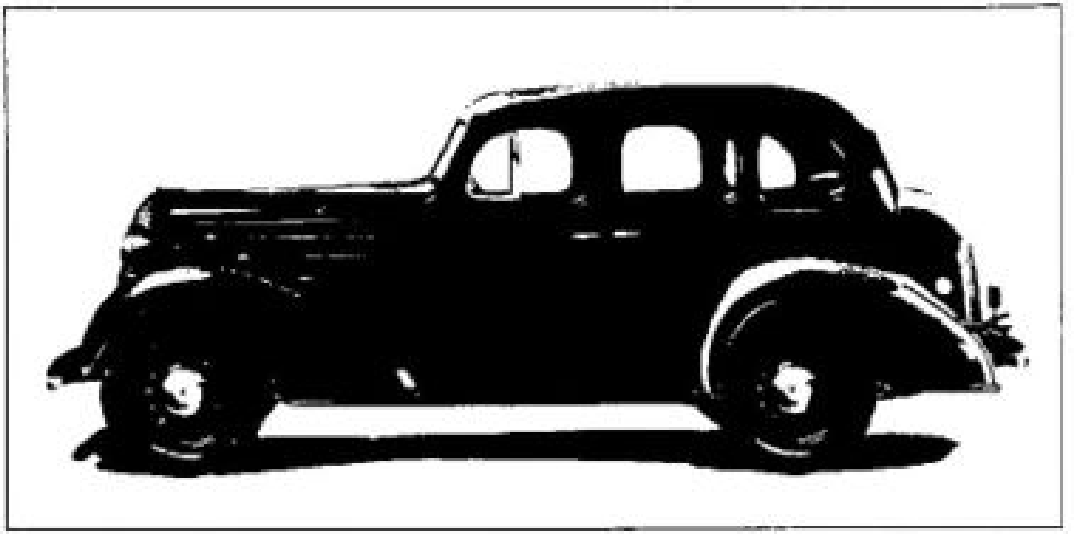
CONSTRUCTION

The 1936 STANDARD body construction is the same construction which was thoroughly proved in the 1935 MASTER bodies. It is stronger and more durable, provides greater protection for the passengers and permits the more beautiful body lines.

Each body consists of a solid framework of wood, braced by steel, around which three massive sheet steel units are closely fitted and welded together. These units consist of the roof, the cowl assembly and a third consisting of the rear and the two side panels. The front structure of each body frame, to which the cowl panel is welded, consists of an inner cowl, the instrument panel, the front pillars and the windshield header panel, all of sturdy, rugged steel, carefully braced and welded together to form one solid unit.

The outstanding feature of these new bodies is the roof, which heretofore has been constructed of wooden bows and slats, over which was placed a padding and then a layer of imitation leather. This is now a "Turret-top", a solid sheet of seamless steel, drawn and formed from a single piece. It places the protection of steel over the occupants of the car, where it is most needed. This solid steel roof is reinforced by sturdy bows of heavy gauge steel, flanged and grooved for greater strength and rigidity and securely anchored at either side of the car to the strong framework of hard wood.

There are four of these bows on the five passenger bodies and three in the Coupe. The body floor, or underbody, is a single steel stamping, grooved and ribbed for greater strength and rigidity and firmly supported by a wood and steel framework. It extends from the rear of the car to the front end structure of the body frame, to which it is welded.



Its forward end is bent upward, to form the toe board. Strong, removable steel panels in this underbody provide access to the pedals and transmission. A strong plywood panel is provided above the storage battery.

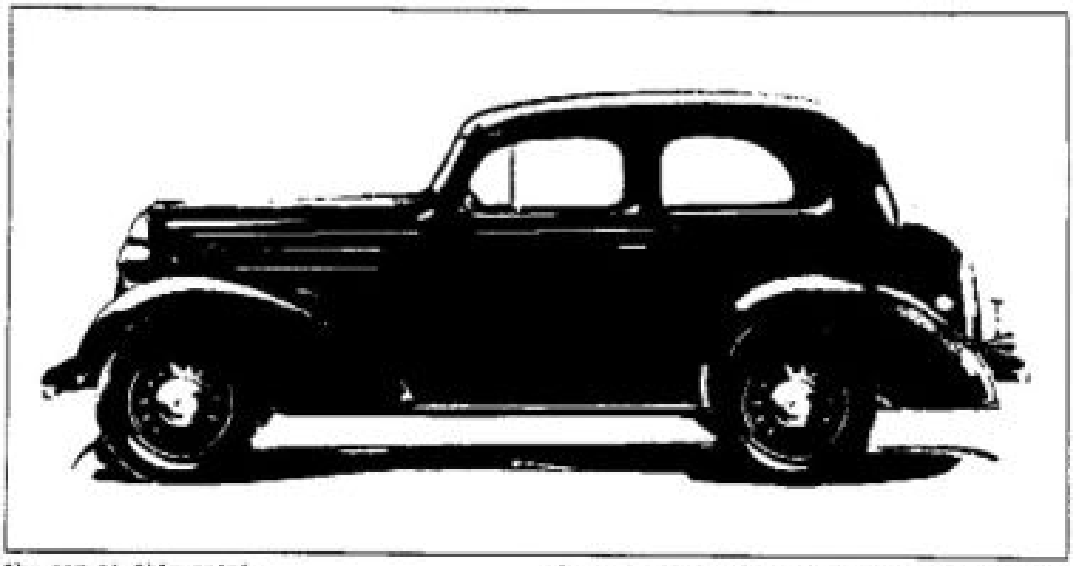
All wood parts used in the STANDARD 1936 bodies are of the best quality obtainable and each part is coated with a waterproof paint, which seals it against wood rot.

BODY INSULATION

The new STANDARD bodies are thoroughly insulated against heat cold and sound. The entire roof and all panels, such as the rear panel and side quarters, the door panels and the cowl, are insulated by a padding of deadener felt 3/16" thick, which is securely cemented in place. The dash is insulated in much the same manner as it was in 1935. The floor of the front compartment is insulated with Celotex, which is covered by a rubber mat similar in design to that of the 1935 MASTER. Heavy jute insulation is provided under the carpet of the rear compartment floor and under the rear seat on all five passenger body types.

WINDSHIELD

The windstream "V" windshield, sloping at an angle of 31 1/2 degrees, provides improved vision and permits the natural flow of air currents, with a consequent decrease in wind resistance and noise. It consists of two immovable plates of safety glass, divided at the center by the chrome-plated decorative bar, the inner side of which is finished to match the garnish mouldings of the car interior. The sealing of the windshield is improved by drawing the windshield moulding more tightly against its rubber mounting, thus making it impossible for water to enter



the car at this point.

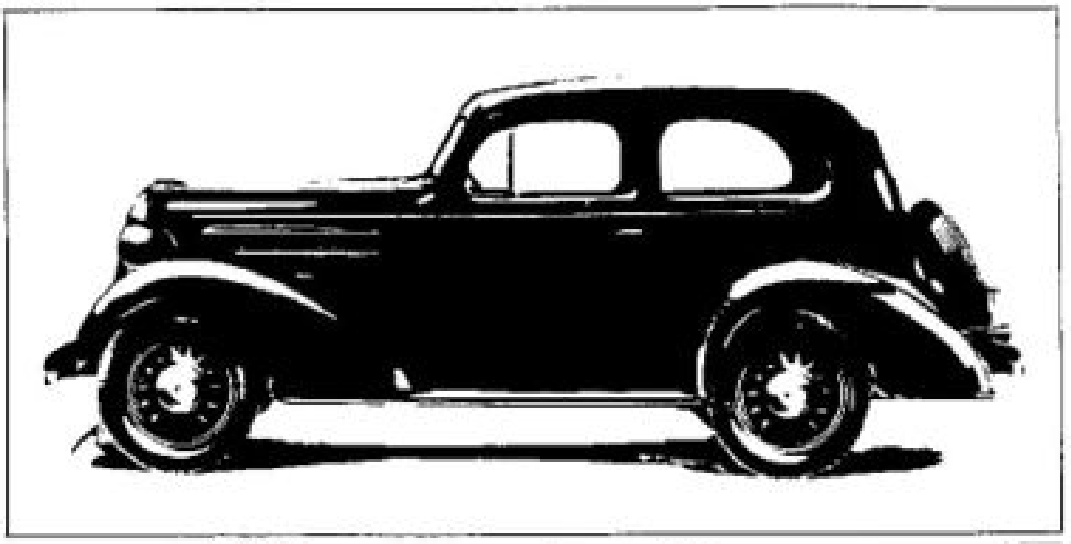
The windshield wiper, as on the MASTER bodies, is mounted at the bottom and swings thru a greater arc, 160 degrees, forcing rain, snow or sleet to the bottom of the glass. It cleans nearly all of the driver's half of the windshield and parks at the left, flat against the lower edge of the windshield, well out of the driver's range of vision. Wiper speeds are controlled by the convenient button at the bottom of the windshield on the small shelf above the instrument panel. Provision is made for the easy installation of a second wiper on the passenger's side of the windshield, the same concealed motor being used to operate both in unison.

Because of the greater slant of the windshield, the cowl ventilator is hinged at the rear. The opening, as in the past, is screened, to prevent insects from entering the car at this point. The front edge of the ventilator cover projects forward at its center to conform in line to the back line of the hood and to the "V" of the windshield.

DOORS

All doors in the 1936 STANDARD bodies are improved in appearance and extend closer to the running boards. As in the past, two sturdy and rugged brass bushed hinges support the front door from the front and the rear door from the rear for greater safety, strength and convenience. An important feature of the front doors is their shape at the forward edge. The opening from the top of the door, which curves to blend into the roof line, follows the slope of the windshield to the belt. From the belt

to the bottom, it follows the sweeping back line of the hood. The door attains its maximum width at a point near the floor line, for easy entrance and exit.



WINDOWS

The Fisher system of No-Draft ventilation is continued, with slight changes to agree with the new design of the bodies. The windows are of the same design as those of the MASTER bodies. The channels of the door windows are metal of continuous "U" section, lined with rubber-backed pile material. This type of channel eliminates the possibility of tearing, rattling or coming loose and not permitting the window to close with ease. It assures a snug fit between glass and channel, provides a recess for the top of the glass, equal in depth to the recess on each side, and allows the glass to move freely in all kinds of weather. The metal is polished, stainless steel, giving the effect of a neat bead around the edges of the windows. The ventipane, windshield and back window mountings are of solid smooth-surfaced rubber.

GARNISH MOULDINGS

The appearance of the garnish mouldings, which frame the windows, is greatly improved and their finish is more durable. They are now each a single metal unit without seams or joints. They are painted a smooth gray color with a poplar grain effect, which merges into a smooth jet black at the moulding inner edge.

SEATS

The seats in all bodies are approximately two inches wider, with more head room and are relocated in the bodies in more comfortable riding positions. The bucket type front seats of the Coach and Town Sedan also have higher back

cushions and deeper seat cushions to provide more comfort for the driver and the front seat passenger. The back of the passenger bucket seat hinges, so that it is not necessary to raise the entire seat to enter the rear compartment. There is more shoulder room in all five passenger bodies. This is augmented in the Sedan by depressions in the sides of the

body above the arm rests. The rear seat arm rests are longer and improved in appearance. A foot rest for the rear seat passengers is built into a recess in the bottom of the front seat back on the Sedan and Sport Sedan. It is carpet covered and is not easily visible when the rear door is opened, as the sides of the seat extend to the floor at either end.

COMPARTMENTS

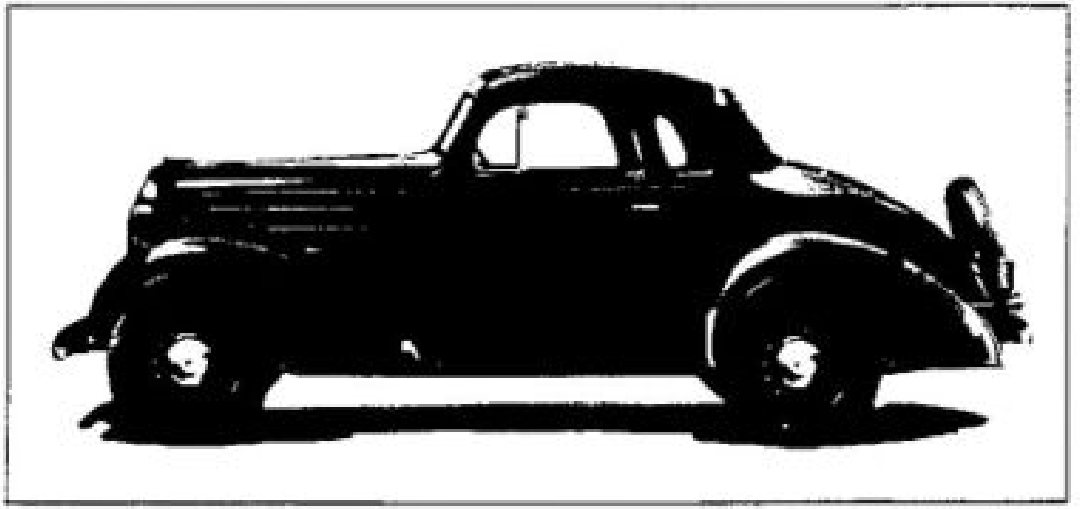
The rear seat of the Sedan and Coach bodies folds forward, permitting access to a large compartment located in the tail of the body. This compartment is large enough to carry ordinary luggage and parcels and the tools and is well padded to prevent rattling of its contents. A handy shelf is provided between the back of the rear seat and the rear window in all bodies for the disposal of small articles. In the Sedan, Coach and trunk bodies, this space is relatively small, but in the Business Coupe, plenty of space is provided for the carrying of brief-cases, doctors' bags or such small luggage. The new glove compartment on the instrument panel provides a space easily available for use by the front seat passengers. Due to its long rear deck, there is much more room in the luggage compartment of the Business Coupe. A pocket for tools is located in the right side of this body at the edge of the deck door opening.

The trunk of the Town and Sport Sedan is identical with those on the Master body model. It is an integral part of the body, designed to blend harmoniously with the body lines. It provides space for carrying a large amount of luggage. This space is supplemented when fender well wheel carriers are used, by removing the floor, which separates it from the spare wheel compartment beneath. The trunk door is large, extending from the top to the base of the trunk, to provide access to both luggage and wheel compartments. It is hinged at the top by two sturdy chrome-plated hinges and is opened by a chrome-plated "T" handle, which incorporates an integral lock. A heavy rubber seal around the door insures protection of the trunk contents when the door is closed. In the trunk body types, tools are stored at each side of the spare wheel.

UPHOLSTERY AND HARDWARE

The upholstery is mohair of a finer grade and of lighter color than heretofore, while the head lining is a high-grade flat cloth, colored to match the upholstery.

The hardware, located in positions approximately the same as in the previous STANDARD cars, is improved in treatment. The escutcheons,



which seal all crank handles and toggle type door locks thru the upholstery, as well as the crank handle knobs, are jet black bakelite. The crank handles, door latch levers and lock toggles are of the same design as heretofore and are chrome-plated.

EQUIPMENT

All body types are provided with an internal sun shade matching the head lining in color. A finger pad of gray leather at the center of its lower edge prevents soiling.

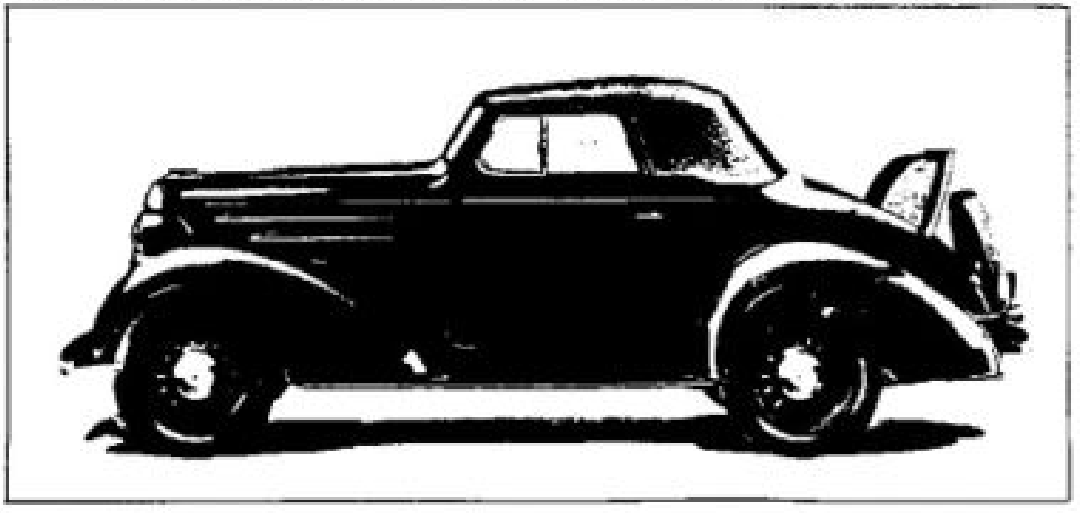
An adjustable rear view mirror also is regular equipment. The dome lamp is of the same type as before, with the switch in the lamp.

A swing-arm metal robe rail, attached to the rear of the front seat, is provided in the Sedan and Sport Sedan

CABRIOLET

The cabriolet, which is to be introduced shortly after the other body types, is an addition to the STANDARD line. It is a long, rakish car, similar in style to the Business Coupe but incorporating individual characteristics which emphasize its use for both sport and business.

The windshield is of sloping windstream "T" design, as on the other body types and is decorated by a chrome-plated center bar. The windshield wiper swings from the bottom. The top, of light tan water-proof fabric, is smart-

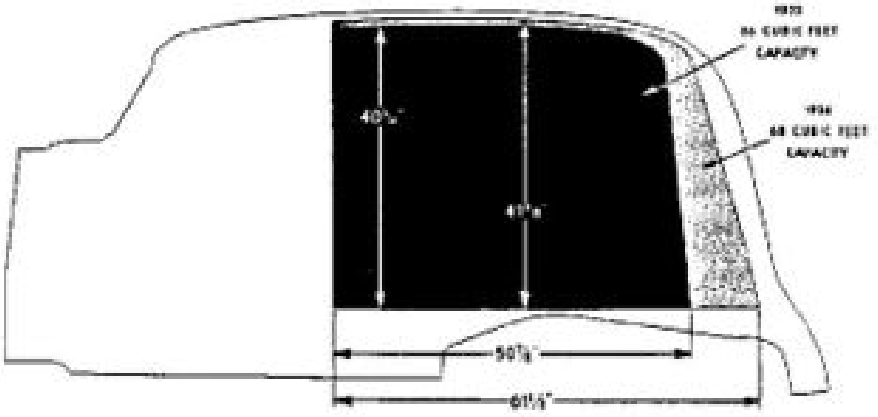


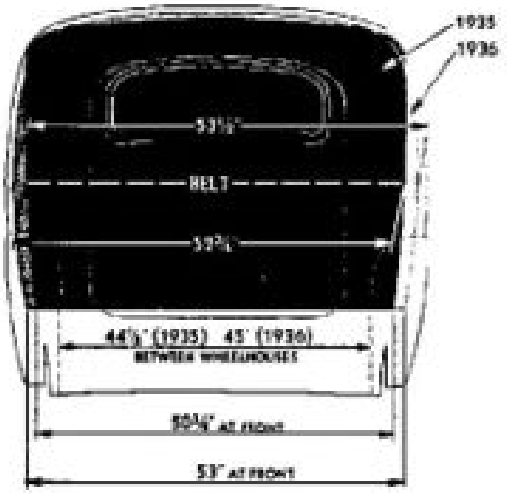
ly tailored with careful sealing at all edges where it is attached to the body proper. At the windshield, three easily operated lever type clamps, one at each side and one at the center, clamp the top forward bow securely to the windshield header. At the rear, the top slopes smartly into the rear deck. A wide section of this rear portion may be rolled down, providing a large opening for communication between the passengers in front and those in the rumble seat. Zippers are provided at the sides of this section to attach it to the rest of the top. The rear window is of glass and is securely fastened to the fabric of the top. A neat sunshade, covered with brown imitation leather, is mounted by an extension hinge at each end to the top forward bow. The extension hinges permit the shade to be adjusted up or down and allow it to be folded into the top when the top is lowered. The top, when lowered, folds into a recess behind the driver's seat. In this position, it is flush with the top of the body proper. When the top is up, the recess provides a large receptable for miscellaneous articles. The interiors of both the driver's compartment and the rumble are roomy and luxurious. The instrument panel is of the same attractive design as in the rest of the STANDARD cars. The driver's seat is of the same construction as the Sedan and has the same adjusting mechanism. This seat, the rumble seat, the door panels and the recess behind the driver's seat are all smartly trimmed in brown imitation leather of high quality. The side trim panels of the rumble compartment are of heavy fiber board, colored brown to match the seat trim. A covered pocket is provided in the trim panel at the right side of the rumble seat for tools. No-draft ventipanes are provided in the door windows to assure comfortable ventilation. Both the ventipanes and the windows are bound at the edges by steel mouldings which reinforce the glass. Garnish mouldings like those on the other STANDARD bodies are used at both doors and the windshield. The hardware is of the same attractive design and treatment as on the other bodies. A lock provided in the handle of the right door and toggle latches at the inside of each door assure adequate protection of both the car and its contents. The door of the rumble seat in the sweeping rear deck also is provided with a lock in its "T" shaped handle. Step pads at the curb side of the car on the bumper and the fender facilitate entrance to the rumble seat.

SEDAN DELIVERY

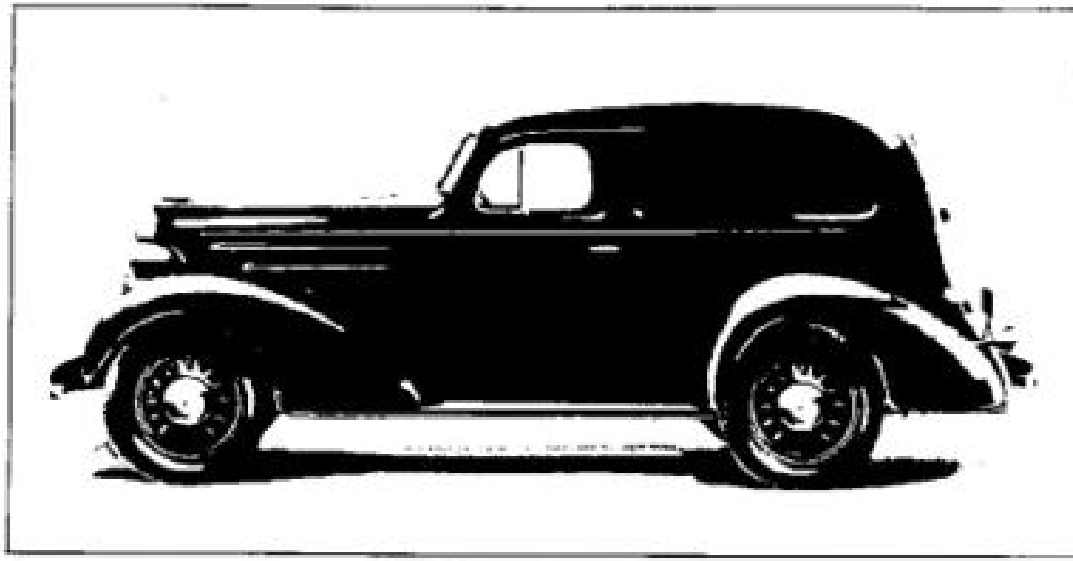
The 1936 STANDARD Sedan Delivery offers modern business an ideal combination of style and practical utility. The body is more attractive than heretofore and has much more load space. MASTER styling with the "V" windshield, "Turret-top", and arching lines increases the beauty of the car, its new appearance being a definite asset as an advertising medium. Larger sign panels provide more space for advertisements. The body contour is very similar to that of the MASTER Coach, except for the front doors and the rear panel. The front doors are large, being the same as those on the MASTER Sedan. The rear panel sweeps gracefully from the "Turret-top" into a smooth tail at a more vertical angle than on the Coach, but more slanting than on the previous Sedan Delivery. The rear door, of large size, is graceful in contour and includes a window of ample proportions, which is carefully sealed in place to exclude rain. When open, the door is prevented from closing accidentally by a special linkage at the bottom. All doors are equipped with locks to assure safety of the load. The front doors have interior toggle locks, the right front door has a lock cylinder in its outer handle and the load compartment door is equipped with a lock located directly below the door handle.

The interior of the Sedan Delivery is improved in many ways. The new STANDARD instrument panel, with its finer appearance, more accessible controls and more readable instruments, improves driving conditions. The package compartment in the panel is an added convenience. The driver's seat is larger and more comfortable, being a Coach bucket seat trimmed with imitation leather. As heretofore, it may be adjusted by means of a "finger tip" control. As on the previous Sedan Delivery, imitation leather is used to trim all three doors and the entire coved ceiling. Durable panelling, lining the rear compartment walls, protects the load from heat, cold and dust. The interior hardware is treated in the same smart manner as on the other bodies. The tools are more accessible, the door to the tool compartment being located in the rear compartment riser at the right of the seat, instead of in the load space floor. The larger load space is 61 1/2" long at the floor, an increase of 10 5/8". Its height is increased to 41 3/8" from 40 5/8". It is 3/4" wider at the belt and 2 1/4" wider at the front of the floor.





SEDAN DELIVERY LOAD SPACE



COMPARATIVE SPECIFICATIONS

	1935	1936
Body types	Coach	Coach
	Business Coupe	Business Coupe
	Sedan	Sedan
	Phaeton	Sport Sedan
	Sport Roadster	Town Sedan
	Sedan Delivery	Cabriolet
		Sedan Delivery
Styling	Conventional	MASTER
Top construction	Fabric top over wooden bows & slats	Solid steel "Turret-top" with steel bows
Underbody	Wood and steel	Full length steel
Windshield	Flat, sloping at 27° angle	Windstream "V", 31 1/2° slope
Windshield wiper location	At top of windshield	At bottom of windshield
Windshield wiper travel	117°	150°
Carmtch mouldings treatment	Brown, grained to simulate walnut	Gray & black, grained to simulate poplar
Hardware treatment	Chrome-plated	Black escutcheons & handles; levers chrome plated
Bucket seats	Solid back, seat hinges at front end	Seat back hinges on passenger seat
Bucket seat depth	17 7/8"	19"
Bucket seat height	24 5/8"	27 1/4"
SEDAN INSIDE DIMENSIONS:		
Windshield to rear window	84 3/8"	85 5/8"
Dash to rear window	98 5/16"	101 5/8"
Front seat leg room- neutral position	36 1/2"	38"
Front seat head room	35 3/4"	36 1/2"

	1935	1936
Rear seat leg room	39 1/4"	39 1/4"
Rear seat head room	34 1/2"	36 1/4"
Width between front pillars at belt	41 1/2"	43"
Width between center pillars at belt	49 1/4"	52 1/4"
Width between rear pillars at belt	51 3/4"	55"
SEDAN DELIVERY LOAD SPACE:		
Floor length	50 7/8"	61 1/2"
Floor width at front	50 3/4"	53"
Floor width between wheelhouses	44 7/8"	45"
Floor width at rear	48 3/4"	50"
Load space width at belt	52 3/4"	53 1/2"
Load space height	40 5/8"	41 3/8"
Rear door opening width- Maximum	34 3/4"	34 3/4"
Rear door opening height	34 3/8"	34 3/8"
Sign panel length	33"	42"
Sign panel height	13 3/8"	12 1/2"

TOOLS

The tools furnished as regular equipment with the STANDARD model are the same as those furnished with the MASTER cars. These are a 5 1/2" round shank screw driver, six-inch combination pliers of an improved design, a ten-ounce ball peen hammer, a nine-inch adjustable wrench, an open end wrench, a spark plug wrench, a hand tire pump, oil can, starting crank, a grease gun, which heretofore was special equipment, and an auto jack.

The auto jack is the same "bumper" jack which was introduced in 1935 for use on the MASTER passenger cars. Contrary to the usual jacks, this one is clamped to either of the front bumper rear bars or to special seats provided at each of the attaching points of the rear bumper to the frame.

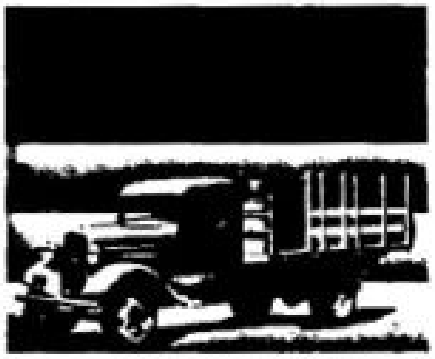
The jack is simple in construction, consisting of a long heavily threaded solid steel shaft mounted upon a sturdy stamped steel base, in which it is permitted to swivel slightly to compensate for slight movements of the car when lifted. The actuating mechanism consists of a large nut threaded to match the shaft and operated through a bevel gear and pinion by means of a cranking action. This mechanism is enclosed in the bottom of a stamped steel case in which a long tube, located above the nut, provides perfect alignment on the shaft. A ball thrust bearing provided between the nut and the tube provides smooth, easy action. A large clamp, provided with a tightening screw, is located near the top of the case and fits over either the bumper bar or jack seat, to prevent slipping of the jack. Due to the new locations for the jack, it is necessary to apply the brakes when jacking up any wheel.

SPECIAL EQUIPMENT

All of the accessories available, at extra cost, for use on the 1936 MASTER passenger cars, also are available for use on the 1936 STANDARD cars. This equipment is as follows:-

Radiator ornament ..... Radiator cover
Radio ..... Radio instrument panel control
Radio overhead and dash speakers .....
Head lamp beam indicator ..... Fender marker
Frame type windshield defroster .....
Electric fan windshield defroster .....
Right hand windshield wiper .... Seat covers
Cigarette lighter ..... Right hand sun visor
Floor vanity mirror ..... Hot water heaters
Tentipane insect screen .....
Special horn button ... Special gearshift knob
Glove panel, ash receiver & electric clock unit
Hand brake lever extension .....
Rear view mirror with clock .....
Wheel discs ..... Wheel moulding
Shield for rear fenders .....
License plate frames ..... Matched horns
Fender well wheel carrier .....
Tire cover lock ..... Wheel lock
Right hand tail and stop lamp .....
Interior baggage carrier .....
Oil temperature regulator .....

In addition to this equipment, a heat indicator, front and rear bumpers and guards and a ring type spare tire cover, special for STANDARD, also are available.



CHEVROLET 1936 ENGINEERING FEATURES

TRUCKS

INTRODUCTION

The HALF TON and 1 1/2 TON truck models, which have proved so satisfactory for the past season, are retained for 1936 with many improvements. The choice of body types for the 1 1/2 TON truck line is the same as in 1935. The line of HALF TON trucks is augmented by the addition of the Suburban Carryall body type, late in the 1935 season.

Both lines are improved in appearance, performance, durability and economy.

The appearance is improved by new, more attractive styling of the sheet metal and new cab and body interior treatment.

On the HALF TON trucks, hydraulic brakes, like those on the MASTER passenger cars, provide better deceleration.

The rear axle of the 1 1/2 TON trucks is now of the "full-floating" type. It is structurally stronger and more dependable, due to new housing construction, as well as the new wheel end design.

The engine, which powers both models, incorporates all the improvements of the 1936 passenger car engines. It is more powerful, with increased fuel and oil economy, greater durability and better cooling.

In addition to these, many other changes of importance are made in the two truck lines. Complete lists of the new features are on the next few pages. The progress charts following the lists of features show how progressively Chevrolet trucks have been improved.

NEW FEATURES IN THE 1936 HALF TON TRUCKS

BRAKES
Hydraulic brakes.
Reduced brake pedal pressures.
Easier brake adjustment.
One-piece brake shoes.
Composite cast iron and steel brake drums.
Quicker heat dissipation from linings.
Rigid brake main cylinder and pedal mounting to frame.
Hydraulic stop lamp switch.
Separate mechanical hand brake system with cable control to rear wheels.

ENGINE
Higher compression ratio.
Increased fuel economy.
Faster acceleration.
"Balanced" carburetor.
"Round-nose" camshaft.
Greater durability of valve train.
Full-length water jackets around cylinders.
Improved cooling of cylinder walls.
Lower oil temperatures.
More rigid crankcase.
Greater durability of engine parts.
Rifle-drilled oil passage in crankcase.
Baffle added at crankcase ventilator.
Increased oil economy.
Improved oil pump drive mechanism.
Counterbored exhaust valve guides.
Increased durability of flywheel ring gear.
Improved engine cooling.
More efficient air cleaner.

CLUTCH
"Shot-blasted" disc cushion springs.
More accurate release lever alignment.

STEERING
Larger pitman shaft and bushings.

Stronger pitman arm.

WHEELS
Stronger, more rigid wire wheel rim section.
More stable mounting of wheel carrier to axle.

SHEET METAL
More attractive streamlined sheet metal.
More massive radiator appearance.
Chrome-plated radiator grille.
Chrome-plated grille moulding.
Chevrolet emblem located on body of grille
Two horizontal streamlined hood louvres on each hood side panel.
Chevrolet emblem added to hood side panels above louvres.
Front fender nose extends lower.
Valances added to front fenders.

INSTRUMENTS
Improved instruments in front of driver.
Parcel compartment with lock added to instrument panel.
Stronger, more simple instrument mounting.
New instrument panel finish.
New type ignition and door lock key.

ELECTRICAL
Ventilated generator.
More direct battery ground connection.

CAB
Rounded corners at bottom of windshield.
All-steel doors with steel trim panels.
Interior of cab entirely trimmed.
Adjustable seat and back cushions.

BODIES
Rounded corners at bottom of windshield.
All-steel front doors with steel trim panels.
Improved seat trim.
Suburban Carryall body added to line.

SPECIAL EQUIPMENT
Steel spoke wheels with low pressure tires.
Finger-grip fire extinguisher.
Oil temperature regulator.
Fan shroud.

NEW FEATURES IN THE 1936 ONE AND ONE-HALF TON TRUCKS

REAR AXLE
"Full-floating" rear axle.
Increased rear axle life.
Improved service conditions.
Stronger, more rigid, malleable iron rear axle differential housing.
Seamless steel rear axle housing tubes.
Barrel-type rear wheel bearings.
Interchangeable, stronger rear spring seats.

BRAKES
Drop-forged, longer hand brake lever.

ENGINE
Higher compression ratio.
Increased fuel economy.
"Balanced" carburetor.
"Round-nose" camshaft.
Greater durability of valve train.
Full-length water jackets around cylinders.
Improved cooling of cylinder walls.
Lower oil temperatures.
More rigid crankcase.
Greater durability of engine parts.
Rifle-drilled oil passage in crankcase.
Baffle added at crankcase ventilator.
Increased oil economy.
Improved oil pump drive mechanism.
Counterbored exhaust valve guides.
Increased durability of flywheel ring gear.
Improved engine cooling.
More efficient air cleaner.

CLUTCH
Improved clutch performance.
Longer clutch life.
"Shot-blasted" disc cushion springs.
More accurate release lever alignment.

PROPELLER SHAFTS AND UNIVERSAL JOINTS
More rigid joint of front propeller shaft housing and front universal joint ball sleeve.
Lubrication fitting added to forward propeller shaft housing.
Graphite-coated universal joint ball seals.
Increased propeller shaft and joint durability.

FUEL TANK
Fuel tank suspended below seat in cab.
External fuel tank filler at side of cab seat.
Stronger fuel tank end construction.

STEERING
Larger pitman shaft and bushings.
Stronger pitman arm.
More rigid steering gear to frame attachments.

FRONT SPRINGS
Double-lock front spring stops.
Wider, heavier front spring alignment clips.

CHEVROLET 1936 ENGINEERING FEATURES TRUCKS

WHEELS
Continuous type wheel rim clamp rings.
Stronger front wheel hubs.
Increased front wheel bearing capacity.
Stronger front wheel spindles.
Improved dual-wheel spacer design.
More stable mounting of wheel carrier to cowl.

SHEET METAL
More attractive streamlined sheet metal.
More massive radiator appearance.
Chrome-plated radiator grille.
Chrome-plated grille moulding.
Chevrolet emblem located on body of grille.
Two horizontal streamlined hood louvres on each hood side panel.
Chevrolet emblem added to hood side panels above louvres.
Fender nose extends lower.
Valances added to front fenders.
Chrome-plated spring steel front bumper of greater width.

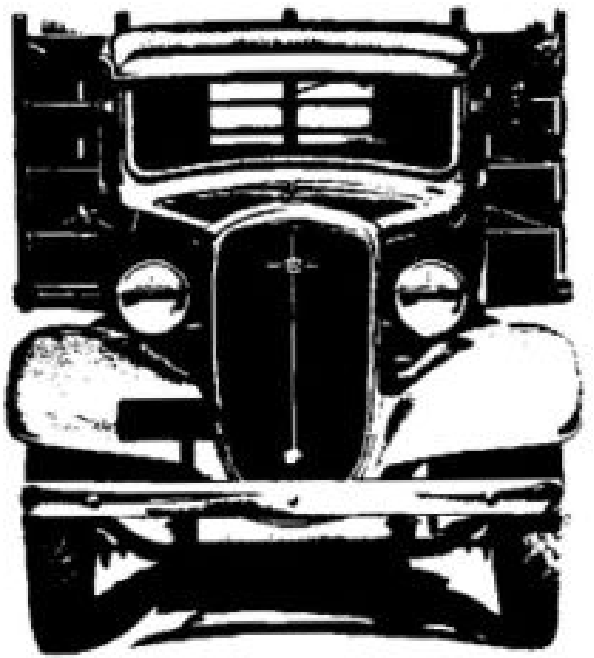
INSTRUMENTS
Improved instruments in front of driver.
Parcel compartment with lock added to instrument panel.
Stronger, more simple instrument mounting.
New instrument panel finish.
New type ignition and door lock key.

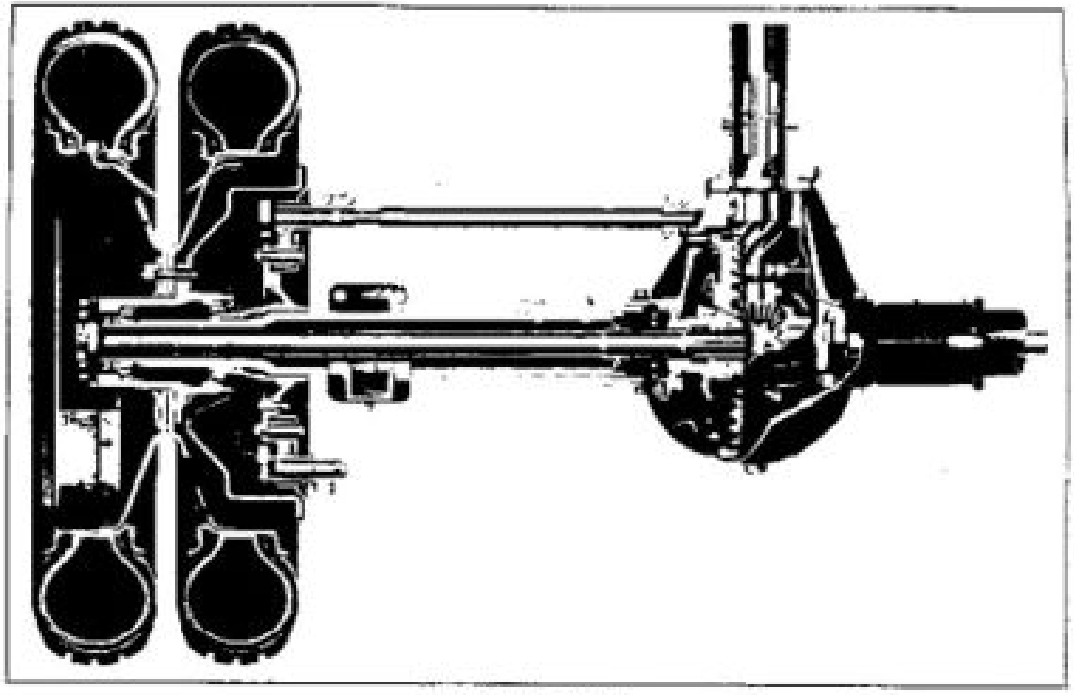
ELECTRICAL
Ventilated generator.
More direct battery ground connection.

CAB
Rounded corners at bottom of windshield.
All-steel doors with steel trim panels.
Interior of cab entirely trimmed.
Adjustable seat and back cushions.

BODIES
Rounded corners at bottom of windshield.
All-steel front doors with steel trim panels.
Improved seat trim.

SPECIAL EQUIPMENT
Redesigned auxiliary springs.
Finger grip fire extinguisher.
Oil temperature regulator.





REAR AXLE

FULL FLOATING REAR AXLE

The rear axle of the 1 1/2 TON trucks is of the 'full floating' type.

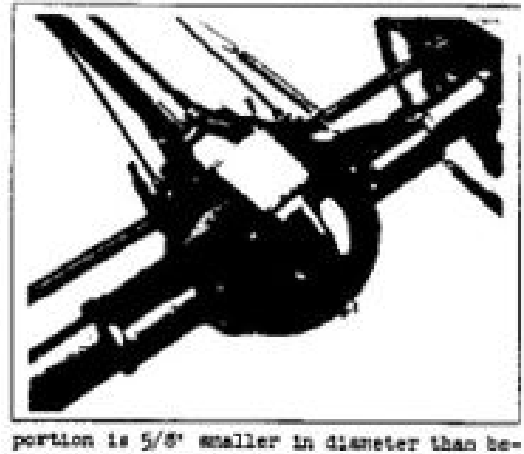
Rear axle loads, which formerly were carried on the ends of the axle shafts, are now carried directly on the rear axle housing. This relieves the shafts of bending strains and permits them to function more efficiently, as they now have only one duty- to turn the rear wheels.

In case of axle shaft failure due to continued excessive overloading, the truck remains supported on its four wheels. Because of this, the truck may be towed or pushed to a service station and the repairs may be made more easily and quickly, without the necessity of removing the load or jacking up the axle.

REAR AXLE HOUSING

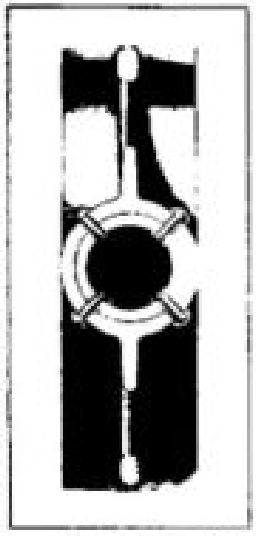
The rear axle housing is entirely redesigned for the new type of construction and is exceptionally sturdy, being thirty-five percent stiffer than that of the 1935 trucks. It consists of a separate cast housing, which encases the differential and two housing tubes which enclose the axle shafts.

The housing encasing the differential is a thick-walled, malleable iron casting of the banjo type, similar in the shape of its central portion to the pressed steel housing of the previous model. Its walls are thicker, having a minimum thickness of 9/32", which is increased to a considerable extent at the points of greatest stress. The central banjo



portion is 5/8" smaller in diameter than before, thereby increasing the road clearance 5/16" at its lowest point.

Two integral cylindrical arms extend from either side of the banjo, to provide support for the inner ends of the housing tubes. The arms are exceptionally strong, having walls 1/2" thick, which are reinforced and braced by heavy flanges at the arm extremities and by two heavy ribs, one above and one below. These latter extend from the outer circumference of the housing banjo to the flanges at the ends of the arms.



The housing tubes are formed from seamless steel tubing and are then heat-treated to increase their strength and toughness.

These tubes are each pressed a distance of 5 7/8" into the arms of the cast housing under a pressure of not less than twelve tons and then each is riveted to its respective arm by eight 3/8" diameter rivets. This type of joint precludes the possibility of breakage at the center of the housing. The minimum wall thickness of the housing tubes is 3/8". The outer end of each tube is contracted to provide for the mounting of the wheel bearings and its extreme outer end is threaded to provide means for the adjustment of the bearings.

The axle housing flanges, which in 1935 served to support both the brake anchor and flange plates and the wheel bearings, are replaced by simply constructed flanges, which support only the plates. Each of these flanges is a drop-forged steel ring, which is forced onto its respective tube and then welded around its entire inner end, making it an integral part with the tube.

REAR WHEEL HUBS

The rear wheel hubs are entirely redesigned to contain the wheel bearings and to provide for the retention of the axle shafts in their housings. The hubs are heavy malleable iron castings capable of bearing a great load. Due to the use of special wheel bearings in the new construction, the pilot upon which the wheels fit is 4 3/4" in diameter, an increase of 1/2".

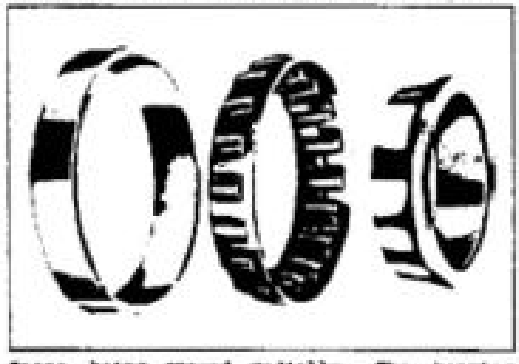
REAR WHEEL BEARINGS

The load at each wheel is carried on two Hyatt roller bearings of an entirely new type, designed especially and exclusively for the Chevrolet Motor Company and its associates. This type of bearing, which is the result of over twelve years of research, combines two features found together in no other type of bearing.

It is self-aligning and is of three-part construction. These three parts are the inner race, the roller and cage assembly and the outer race, each of which may be serviced separately.

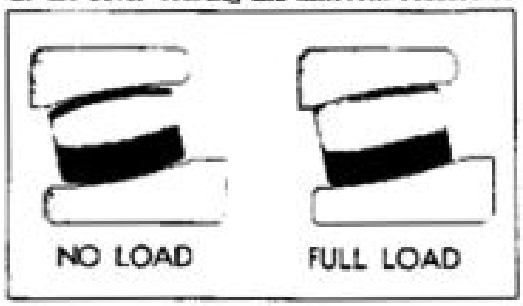
This type of bearing takes both radial and thrust loads and provides an exceptionally large capacity in a relatively small space. The space saved on the truck rear axle is of great importance, as it allows the bearings to be encased by the wheel hub, with only a small increase in the hub diameter. The rollers and both inner and outer races are made from high-grade electric furnace steel, a very elastic steel, which is especially tough, not breaking down under heavy loading.

Due to its construction, this type of bearing has the unique quality of increasing its capacity as the load increases. The rollers are shaped like small barrels, their bearing surfaces being ground radially. The bearing surfaces of the races are likewise ground radially, but on a larger radius, so that under a light load, the contact between these surfaces of the roller and races is slight. As the load increases, the elasticity of the material permits the rollers and races to be compressed so that more of their bearing sur-



face is in contact. Therefore, the greater the load, the greater the bearing contact and capacity.

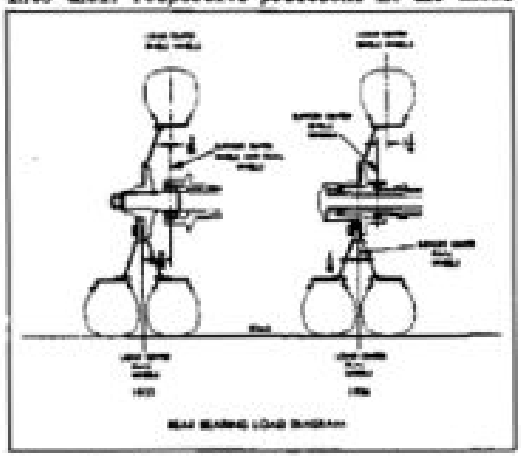
The inner and outer wheel bearings, used on the "full-floating" truck rear axle, are of two different sizes, the inner bearing being larger and fifteen percent greater in capacity than the outer. There are eighteen rollers in the outer bearing and nineteen rollers of



a greater diameter in the inner.

The large inner bearing, which is designed to take most of the load when single wheels are used, is located just outboard of the wheel center. The outer bearing is located so that when dual wheels are used, the center of support between the two bearings is over three inches farther outward and more directly in line with the dual wheel centers, thus taking the load more directly.

The outer races of the bearings are pressed into their respective positions in the wheel



hub. The thrust of the inner bearing is taken by a shoulder in the hub. The thrust of the outer is taken by a spring steel snap ring, which fits in an annular groove inboard of the bearing. This ring is split, with the two ends bent inward where they may be grasped by pliers when removing the race. The inner races are slip-fitted on the housing, permitting them to gradually creep around the housing, so that their wear is uniformly distributed around their circumferences. The inner race of the inner bearing, along with the oil deflector, which prevents oil from entering the brake drum, is located on the housing by a malleable iron spacer between the oil deflector and the housing flange plate. The inner race of the outer bearing is held on the end of the axle housing and adjustment for both bearings is provided by two large nuts, which are threaded onto the housing end. These nuts are threaded rings having six radial slots on their outer surface for assembly and removal. A nut lock, having eleven external radial tangs and one internal tang, is located between the nuts. The internal tang fits into the keyway on the end of the axle housing to prevent the lock from turning. The other tangs are so located that one of three tangs may be bent into a slot of the inner nut and one of the eight remaining tangs, which are bent outward, may be bent around the outer nut to engage one of its slots. The provision of these numerous tangs permits locking the nuts in many positions, thereby providing many adjustments for the bearings. The one adjustment serves for both bearings, as the entire wheel hub moves inward when the adjustment is taken up.

REAR AXLE SHAFT

The axle shaft, which now serves only to turn the rear wheels, is splined to the differential by the same splines as heretofore, while its outer end is upset to form a thick disc-like flange, by which it is retained to the wheel hub. Eight 7/16" diameter bolts and lockwashers on a 3 7/8" circle bolt the flange to its hub. Two diametrically opposed, tapped holes are provided in the flange for an axle shaft puller, in case the shaft should stick at the differential. Ordinary removal or installation of the shaft is extremely simple. For removal, the shaft is pulled out by hand after the eight flange bolts have been removed. For installation, the shaft is pushed into its housing tube, after which the eight bolts are installed. In the installation, the shaft is aligned with its differential gear thru the steel case of an oil seal, which is located around the shaft at the inner end of the housing tube. This

case protects the oil seal and has a spun flange which guides the shaft into position. For its entire length between its splined inner end and its flanged outer end, except for a local enlargement for an oil seal, the shaft is 1 3/8" in diameter and has no contact with the housing by which it is encased. As the torsional stress of the shaft tends to localize at its outer end, provision is made at this point to prevent fatigue or breakage by means of a taper to a slightly larger diameter just inboard of the flange.

OIL SEALS

A leather oil seal, similar to that used at the outer end of the previous rear axle housing, is located at the inner end of each housing tube, to prevent oil from the differential from leaking into the tube. It consists of a strip of leather, which is held around the axle shaft by a coiled spring. The leather and spring are housed in a steel case, which is held in the end of the tube by a spring steel snap ring, which permits easy replacement.

Another oil seal is provided in the inner end of the wheel hub just inside the bearing, to maintain an oil level in the hub sufficient to lubricate the bearings. This seal consists of a ring of absorbent felt which encircles the inner race of the inner wheel bearing and which is contained in a steel casing pressed into the end of the wheel hub. Oil which may leak past this seal from the hub is thrown out of the drum before it gets near the brake linings by means of an oil deflector similar to that previously used. A paper gasket, under the axle shaft flange, prevents oil leakage at the connection to the wheel hub.

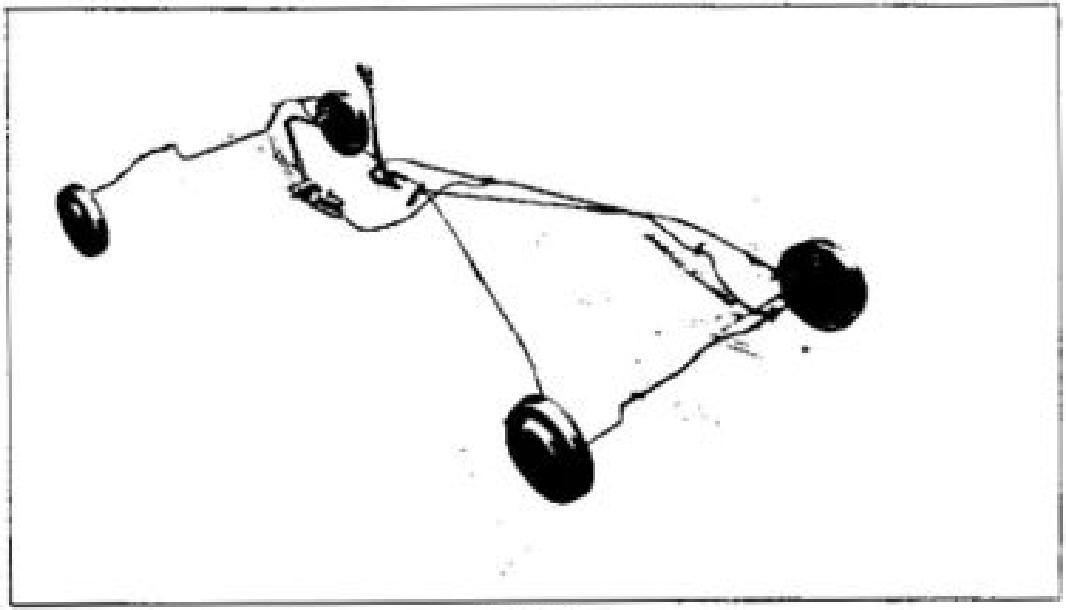
SPRING SEATS

The spring seats and caps are redesigned for interchangeability, the seat and cap assembly on the right being identical with that on the left. This simplifies service. In addition, both seats and caps are made stronger. Metal is added at each end of the seats to provide a better seat for the spring "U" bolts. This increases the total spring seat width from 3 3/4" to 4 3/8". On the caps, likewise, metal added between the bosses for the "U" bolts adds strength. The screws which hold each seat and cap together now are inserted from below, so that the cap may be removed without removing the spring. Dowels are used in place of rivets to retain the spring seat anchor plates to the rear axle housing tubes. These dowels are 1/8" larger in diameter than the rivets. When assembled in position, they are spotwelded in place, while the ends of the anchor plates are welded to the tubes. The method of fastening makes the anchor plates integral parts of their respective housing tubes.

COMPARATIVE SPECIFICATIONS

	1935	1936
Rear axle type	Semi-floating	Full-floating
Axle housing rigidity	100%	135%
Axle housing type	Pressed steel banjo with integral tubes	Malleable iron banjo with seamless steel tubular ends
Banjo wall thickness	1/4"	9/32" min.
Rear axle road clearance– single wheels	8 11/16"	9"
Rear axle road clearance– dual wheel	8 1/16"	8 3/8"
Axle housing arm wall thickness	1/4"	1/2"
Axle housing tube thickness	1/4"	7/16" min.
Overall length of housing assembly	58" between faces of end flanges	71"
Rear seat anchor plates fastening to housing	2 rivets, (3/8" dia.)	2 dowels, (1/2" dia.) welded in and ends of plates welded to tube
Spring seat assembly	Separate right and left hand assemblies	One assembly for either right and left
Spring seat length	3 3/4"	4 3/8"
Spring seat bolts removal	Removed from inside seat	Removed from below cap
Axle shaft type	Tapered spindle	Hub forged integral

	1935	1936
Axle shaft diameter	2.223"	Normal 1 3/8"
Wheel bearings per wheel	Double row B.B.	2 Hyatt barrel-type bearings
Wheel hub pilot diameter	4 1/4"	4 3/4"
Distance between wheel hub flanges	62 7/8"	62 7/8"
Distance between wheel bearings	56 3/8"	56 9/16" Inner 58" Outer
Tread- Standard single wheels	56 1/16"	56 1/16"
- Standard duals, outer wheels	71 1/16"	71 1/16"
- Dual outer wheels with spacer	73 7/16"	73 7/16"
Wheel hub fastening	Nut, lockwasher and cotter pin	2 ring nuts and lock



BRAKES

HALF TON HYDRAULIC BRAKES

The hydraulic brake system of the HALF TON trucks incorporates all of the design features and advantages of the brakes on the MASTER passenger cars.

Its adaptation to the HALF TON truck, however, is different from that of the MASTER, due to the differences in the two chassis.

BRAKE DRUMS

The brake drums are of composite cast iron and steel and are eleven inches in diameter. This changes the service braking area from 170 square inches to 158 1/4 square inches, as on the MASTER. The cast iron braking surface more than compensates for the smaller linings. The rear brake drums are identical with the MASTER and cause the same minor changes in the rear axle. The front brake drums are identical with those on the MASTER Conventional model and differ from the MASTER Knee-action model only in the attachment to the front wheel hubs.

These front drums are drawn slightly deeper than the MASTER and mount on the inside of the hub flange, instead of outside. The drums are held permanently to the hub by the wheel bolts and pilot on their hubs within the same close limits.

Within the drums, the mechanism is identical with that of the MASTER, except for the material of the brake shoe linings and the accessibility to the front wheel cylinders for shoe adjustment. The front wheel cylinders are ad-

justed through holes in the brake flange plates, as on the rear wheels.

MAIN CYLINDER

The main cylinder is identical with that of the MASTER model and incorporates the same hydraulic stop lamp switch and brake pedal stop. It is mounted with the brake and clutch pedals on a rigid cast malleable iron bracket, which is bolted to the transmission and clutch housing, instead of to the frame, by five bolts, two to the transmission and three to the housing.

In this arrangement, the brake pedal is supported alone between two bosses directly ahead of the main cylinder, to which it is connected by the same type of linkage as on the MASTER. Its location is slightly to the rear of its previous position. The clutch pedal is supported on a short shaft from an individual boss on the bracket ahead of the brake pedal and is redesigned for its new mounting. The offset of its shank is reduced one inch and its pivot bearing is lengthened 1/8". As on the MASTER, it is stopped by a rubber block attached to the under side of the toe-boards, instead of by a sheet metal stop at its pivot end. It is adjusted in the same manner as previously, while the brake pedal is adjusted at its link to the main cylinder.

HYDRAULIC PIPING

The arrangement of the hydraulic piping on the HALF TON trucks is very similar to that of the STANDARD passenger cars. The main pipe from the main cylinder crosses the frame in the channel of the second cross member to a "T" connector in the channel of the right side rail. From this "T", two pipes, clipped in the side rail channel, extend in opposite directions.

The rear line joins a flexible hose at a frame bracket at the start of the rear axle kickup. The hose extends to piping on the rear axle housing, which leads to the rear wheel cylinders, as on both passenger car models.

The pipe extending forward from the "T" is connected to the front wheel brake hoses in a very similar manner to that of the STANDARD. The pipe lines are of the same diameter, thickness and material as on the MASTER and STANDARD models and the connectors are the same. Altogether, there are only slightly more than twenty feet of piping held securely to the frame and rear axle by twelve clips and five rigidly supported connectors. In all cases, the lines are fully protected by their supporting members or by wire armor.

HALF TON BRAKES

The hand brake linkage of the HALF TON trucks is almost identical with that of the STANDARD passenger cars, except for the mounting of the hand brake lever and the length of the pull rods. The hand brake lever and sector are mounted on the right side of the transmission in the same position as before. They are connected, like the STANDARD, to a long idler lever which pivots on a stamped bracket riveted to the second cross member. As on the MASTER model, the hand brake lever is longer, while a heavy spring is incorporated in the yoke of its pull rod to the idler lever.

Two long pull rods, attached to the idler lever in the same manner as on the STANDARD, extend in a "V" to meet their respective rear wheel brake cables just ahead of the third cross member. Each cable is attached to the third cross member by a bracket bolted below the member. From this point, the same mechanical linkage as in the MASTER and STANDARD operates the rear brakes.

This linkage is much more simple than before, as there are but three pull rods, instead of five, the cross shaft with its leverage and bearings is eliminated and four moving joints replace the previous ten. This arrangement reduces friction and noise and increases the efficiency and durability of the linkage.

HAND BRAKE LEVER

On the 1 1/2 TON trucks, the hand brake lever is three inches longer, to provide more leverage and, therefore, easier brake application. It is much stronger, being of drop-forged steel, instead of a steel stamping.

COMPARATIVE SPECIFICATIONS

HALF TON TRUCK BRAKES	1935	1936
Service brake type	4 wheel mechanical	4 wheel hydraulic
Hand brake type	4 wheel mechanical	Mechanical at rear wheels
Brake shoe construction	Two pieces, face and web welded together	One piece, face and web rolled integral

	1935	1936
Brake shoe actuation	By cam turning on roller sector	By piston in wheel cylinders
Limited articulation	Reverse shoes only	Forward and reverse shoes
Brake shoe guides	Guides from anchor plate straddle shoe web	Conical spring holds shoe edge against guides on brake flange plate
Brake drum construction	Pressed steel	Composite, cast iron and steel
Brake drum size	12"	11"
Brake lining effective area	170 sq.in.	158 1/4 sq.in.
Brake dirt shield	Split ring	Continuous ring
Brake dirt shield welds to flange plate	11	16
Brake flange plate diameter	14 5/16"	13 3/16"
Wheel cylinder size	None	Front 1 1/4"; Rear 1 3/16"
Brake shoe adjustment	By turning brake cam	By turning adjusting wheels at wheel cylinders
Brake main cylinder size	None	1" dia.
Brake main cylinder mounting	None	Integral with brake and clutch pedals
Service brake linkage adjustments	3 adj.yokes	One at pedal
Stop lamp switch operation	Mechanical linkage	Hydraulic pressure
Hand brake linkage	Mechanical cut-in on service brakes	Mechanical linkage in two rear brakes
Hand braking area	170 sq.in.	79 1/8 sq.in.
Hand brake lever length- pivot to grip end	17 5/16"	19 13/16"
Hand brake cross shaft diameter	1 1/8"	None
Clutch pedal shank offset	2 5/8"	1 5/8"
Clutch pedal pivot bearing length	1 5/16"	1 7/16"
1 1/2 TON BRAKES		
Hand brake lever material	Stamped steel	Drop-forged steel
Hand brake lever length from pivot to start of handle	13 3/8"	16 3/8"

ENGINE

The special truck engine used in the Chevrolet HALF TON and 1 1/2 TON trucks is more powerful, smoother in operation, more durable and more economical.

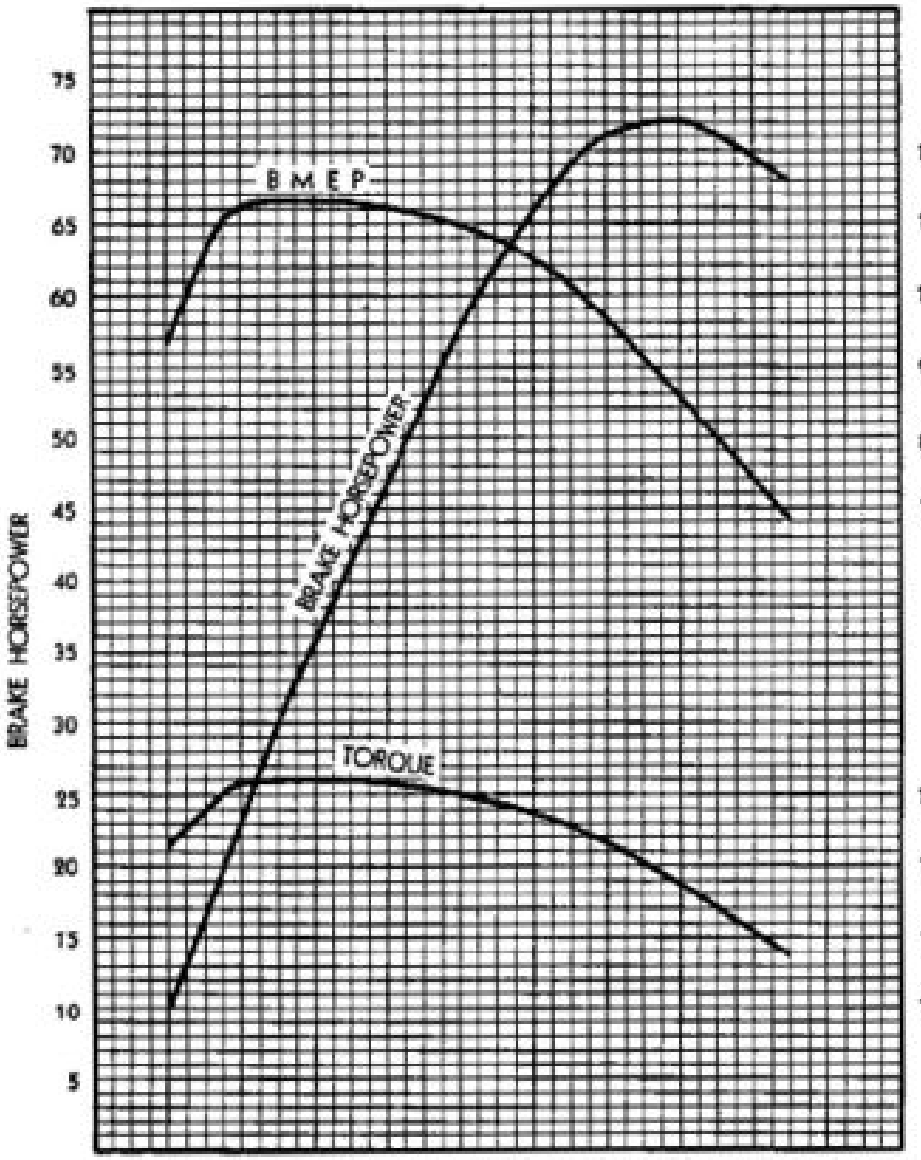
The improved engine incorporates all the design features of the 1936 MASTER engine, except for the special truck parts, none of which, except the air cleaner, have been changed.

The truck engine differs from the MASTER passenger car engine in the following particulars: clutch housing, flywheel underpans, engine mountings and underpans, fan, starter pedal mockup and air cleaner.

As heretofore, the truck engine is governed internally to assure economical operation and great durability. The horsepower output is increased throughout the speed range, the maximum of 72 horsepower being developed at 3200 RPM. 30 horsepower is developed at 1000 RPM, and 57.5 HP at 2000 RPM. The torque, of course, is also increased throughout the speed range, reaching a maximum of 155 foot pounds, which is maintained from 900 to 1500 RPM. The increase in torque insures better pulling power and the ability to start heavy loads more easily. The chart on the following page shows the 1936 power, torque and brake mean effective pressure.

ENGINE COOLING

Engine cooling for both truck lines is improved by changes in the radiator core specifications. The radiator core of the HALF TON truck is now of copper, instead of brass. This increases the radiator efficiency, due to the better thermal conductivity of copper. Copper also takes a better and stronger solder bond, which is more thermally efficient. The specifications for the 1 1/2 TON truck radiator core



POWER AND TORQUE

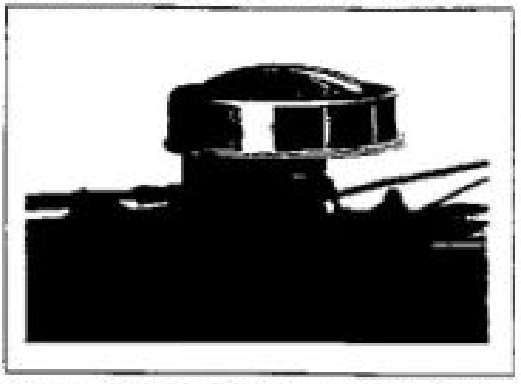
are changed to enlarge the cooling surface of the air fins, thereby increasing the cooling efficiency of the radiator to a great extent.

AIR CLEANER

The truck air cleaner is entirely new. It has greatly increased cleaning capacity, as a result of various new design features. A substantial increase in the area of copper gauze greatly increases the length of time that the filter will operate before it must be cleaned.

The filtering element is no longer directly above the carburetor throat, but is relocated and redesigned, so that collected dirt cannot drop into the air intake passage.

In previous designs, the air blast from the cooling fan tended to blow dust into the air cleaner, but in the new design, the body of the cleaner is arranged to form a shield for the filtering element to prevent this action. The windows, or air openings, are now located on the rear of the cleaner, which is the side opposite to that receiving the fan blast. The air taken into the cleaner is therefore free



from much of the foreign matter in the air stream, especially the smaller abrasive particles, which do the greatest damage to the engine.

COMPARATIVE SPECIFICATIONS

	1935	1936
Maximum horsepower at RPM	68.5 at 3200	72 at 3200
Horsepower at 1000 RPM	28.5	30
Horsepower at 2000 RPM	55.5	57.5
Maximum torque	150 ft.lbs.	155 ft.lbs.
Engine RPM at maximum torque	1000 to 1400	900 to 1500
Compression ratio	5.6 to 1	6 to 1
Carburetor float chamber vent	To atmosphere	To air horn
Carburetor air horn attachment	2 screws	3 screws
Carburetor idle port	One slot	2 punched holes
Oil pump rotor shaft diameter	1/2"	9/16"
Oil pump rotor pin diameter	5/32"	3/16"
Distributor shaft tang width	9/64"	11/64"
Oil pump set screw taper diameter	7/32"	5/16"
Exhaust valve guide counterbore	None	.362" dia. x 1/4" deep
Crankcase ventilator baffle	None	Sheet metal
Inlet manifold ports diameter	1 1/4"	1 5/32"
Valve rocker cover gasket pieces	Stapled together	Dovetailed into each other and stapled
Valve spring pressure- Valve open	104 lbs.	98 lbs.
Oil distributor body gasket	Paper- .030" thick	Cork- .055" thick
Flywheel ring gear teeth	132	133
Starter gear ratio	14.66 to 1	14.78 to 1
Radiator core specifications- HALF TON TRUCK	386 sq.in. of .25" x .40" brass	386 sq.in. of .25" x .55" copper
Radiator core specifications- 1 1/2 TON TRUCK	386 sq.in. of .25" x .40" copper	386 sq.in. of .20" x .55" copper

CLUTCH

CLUTCH DISC CUSHIONING SPRINGS

The clutch disc cushioning springs of both the HALF TON and 1 1/2 TON trucks are "shot-blasted" in the same manner as those of the MASTER car, lengthening their life twenty times and thus increasing the life of the disc.

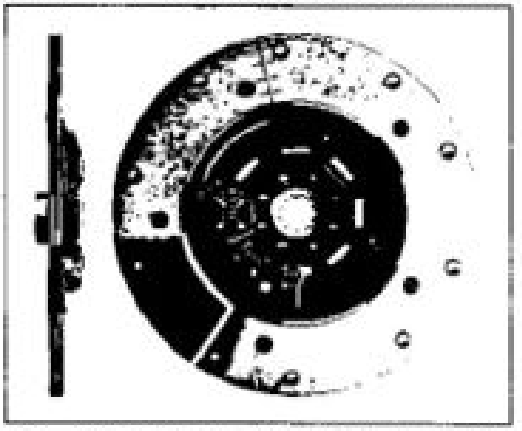
CLUTCH PRESSURE LEVERS

In both truck models, the arrangement of the bolts which attach the clutch cover to the flywheel is revised, as on the MASTER and STANDARD passenger cars, so that the designed relation of the pressure levers with the release bearing plate is maintained more accurately at both the initial and service installations of the cover assembly.

1 1/2 TON TRUCK CLUTCH DISC

The clutch disc of the 1 1/2 TON truck is identical with that used on all other Chevrolet models, except that the facings are 10" in diameter, as on the former trucks. The new disc greatly improves the smoothness of engagement and eliminates chatter and jerking. The rim of the clutch driven plate is divided into five equally-spaced blades, formed by slits extending across the rim and partially around the periphery of the dished portion of the plate. Each blade is depressed toward the flywheel face with a smooth radial wave. The rim of the plate is tempered so that these waves keep their shape regardless of the number of engagements or relatively high temperatures encountered in severe service.

The clutch facings conform to the shape of the waves, so that when the clutch is disengaged there are five raised portions on the face nearest the flywheel and five similar portions on the opposite face where the lining contacts the pressure plate. Upon engagement, these raised portions encounter the faces of the flywheel and pressure plate, gradually flattening under the clutch spring pressure until



full engagement is accomplished. In this manner, the shock of the full driving load of the engine is not applied all at once, but is spread out so that the torque is smoothly absorbed.

COMPARATIVE SPECIFICATIONS

	1935	1936
Clutch disc cushioning springs	Not "shot-blasted"	"Shot-blasted"
Clutch engagement- 1 1/2 TON trucks	Warped driven plate	Waved driven plate
Driven plate treatment- 1 1/2 TON truck	None	Heat treated

The synchro-mesh transmission used on the HALF TON trucks, as well as on the MASTER passenger cars, is retained for 1936 with only two minor changes. These do not affect the operation of the transmission in any way.

SPEEDOMETER GEARS

The transmission rear bearing retainer is revised to locate the speedometer drive gear above the engine center, instead of below, so that the speedometer cable will clear the new brake main cylinder, mounted on the side of the transmission. This necessitates a change from a left hand spiral to a right hand spiral on both the speedometer drive and driven gears. The gear ratios are not changed.

GEARSHIFT LEVER

The gearshift lever is bent to agree with the new adjustable seat of the cab. This locates the knob so that the same room is provided between it and the seat in the seat forward position, as was provided with the stationary seat. Of course, there is now more room with the seat in its rearmost position. The knob is still as accessible for shifting as before and does not interfere with the instrument panel.

COMPARATIVE SPECIFICATIONS

	1935	1936
Speedometer drive gear location	Below engine center	Above engine center
Speedometer gearing	Left hand spiral	Right hand spiral
Gearshift pivot to knob- Vertical	19 1/4"	20 5/8"
Gearshift pivot to knob- Horizontal	10 5/8"	8 1/4"

PROPELLER SHAFT

During 1935, several important changes were made at the forward propeller shaft of the 1 1/2 TON trucks on both the 131 inch and 157 inch wheelbases to increase the life of the shaft and its bearings and the universal joints. The front propeller shaft housing was lengthened to increase its bearing 2 7/16" in the forward universal joint ball sleeve. This not only makes the joint of these two pieces more rigid and stronger, but also provides improved alignment for the propeller shaft and universal joint.

A hydraulic lubrication fitting was added midway between the two universal joints in the front propeller shaft housing, to permit better lubrication of the rear joint by assuring additional lubricant supply. This fitting takes the place of a pipe plug formerly used at this point for the initial greasing at assembly plants.

In addition to these changes, the cork packings at the universal joint balls are coated with graphite. This prevents oil leakage around the ball joint by minimizing the friction between the ball and the packings, thereby adding considerably to the life of the packing.

COMPARATIVE SPECIFICATIONS

	1935	1936
Length of front propeller shaft housing in universal joint ball sleeve	3 1/4"	5 11/16"
Lubrication to front propeller shaft	Thru pipe plug	Thru hydraulic lubrication fitting
Universal joint ball packings	Cork	Graphited cork

FUEL SYSTEM

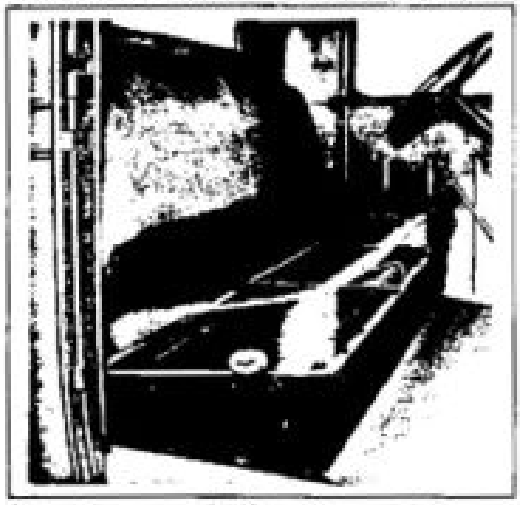
The fuel tank is suspended in the cab of the 1936 1 1/2 TON trucks with no connection to the chassis frame, except for a flexible hose to the fuel pipe. This suspension relieves the tank of twisting and weaving, which are present when the tank is supported by the frame. In addition, the fuel tank is filled, without removing the seat cushion, through a neck which extends to a convenient location at the right of the seat through the wall of the seat riser.

The fuel tank is suspended in the cab from the seat riser by two straps, one at each end. These are hooked into brackets at the seat riser bar and pass under the tank. Integral trunnion bolts, riveted to their other ends, extend through brackets bolted to the seat riser front bar. Tension on these bolts draws the tank tightly into the two pairs of brackets. The brackets are rigid steel stampings, formed to fit the contour of the tank.

The flexible hose, which forms the connection from the tank to the fuel pipe, consists of a metal tube, the walls of which are formed like the folds of an accordion and covered by a braid of brass wire. Connectors are soldered in leak-proof joints at each end. The flexibility of the hose compensates for movement between the cab and chassis and thus precludes possible strain on the fuel pipe.

In all other body types of the 1 1/2 TON truck line, the tank is mounted on the chassis frame, as in 1935. In all HALF TON trucks, including those with cabs, the fuel tank is located at the rear of the chassis frame, as heretofore.

In all 1 1/2 TON cab and body types, the tank is made more leak-proof by a redesign of its heads or ends. In this new design, each head is formed with a smooth, dome-like bulge, which reinforces the end of the tank, replacing the former two crossed ribs. The smooth contour of the dome is not subject to strains, which formerly were apt to cause breaks in the comparatively sharp corners of the crossed ribs.



COMPARATIVE SPECIFICATIONS

	1935	1936
1 1/2 TON TRUCK CABS:		
Fuel tank mounting	Supported by frame	Mounted in cab
Fuel tank filler	Beneath seat cushion	Extends thru right end of seat
Fuel tank flexible tube	None	Accordion folded tube covered by brass braid
1 1/2 TON CAB AND TRUCK BODY TYPES:		
Fuel tank end reinforcement	Crossed depressed ribs	Dome-like depression

STEERING

The steering gear of the HALF TON and 1 1/2 TON trucks is redesigned for better, more uniform operation, longer life and greater strength.

PITMAN SHAFT AND BUSHINGS

The pitman shaft and its bushings are increased 1/8" in diameter and the bushings are each lengthened 1/8". The enlargement of the shaft increases its torsional strength twenty-seven percent, providing a greater factor of safety. The greater length and diameter of the bushings increases their bearing area on the shaft twenty percent.

With the enlargement of the shaft and bushings, the life of these parts is increased to a great extent and the shaft alignment is retained longer, with no sloppiness in movement due to worn bushings. Changes incidental to these improvements are an increase in the pitman shaft housing diameter, with a consequent enlargement of its seat in the steering gear bracket and cap, which attach the gear and the chassis frame.

The bracket and cap, which attach the steering gear to the frame of the 1 1/2 TON trucks, are redesigned for greater strength and rigidity. They are both malleable iron castings, instead of drop forgings. Further strength is added to the cap by the addition of two parallel ribs on its external diameter.

PITMAN ARM

The pitman arm is sturdier, being of wider section, with a uniform taper between the pitman shaft and connecting rod bosses. The pitman shaft boss of the arm is enlarged to fit the new pitman shaft and is increased in strength.

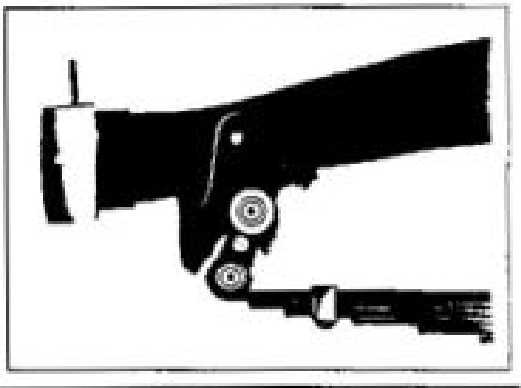
COMPARATIVE SPECIFICATIONS

	1935	1936
Pitman shaft diameter	1"	1 1/8"
Pitman shaft bushings length	1 1/8"	1 1/4"
Pitman shaft bushings area	3 17/32 sq.in.	4 13/32 sq.in.
Pitman shaft housing O.D.	1 5/8"	1 3/4"
Pitman arm taper	Partial	Full
Pitman arm width- Upper end	1 3/16"	1 1/2"
Pitman arm width- Lower end	3/4"	3/4"
Pitman arm upper boss diameter	1 5/8"	1 13/16"

FRONT SPRING

The front spring front hanger of the 1 1/2 TON trucks was redesigned during the 1935 season to incorporate two stops, which prevent undue movement of the front axle in the event of spring main leaf breakage, thereby maintaining steering control. These two stops are heavy lugs, cast integral with the hanger, one ahead of the spring eye and one behind, with sufficient clearance to provide for normal spring and shackle movement.

If the spring should break between the axle and the rear spring eye, the natural tendency of the axle is to shift forward suddenly on the side of the broken spring. The stops prevent this, as, when such breakage occurs,



the spring eye immediately contacts the heavy forward lug which takes the load, stopping forward movement of the spring and axle. The second stop, that just behind the eye on the hanger, checks the rebound from this contact, preventing the spring and axle from moving backward.

In addition, the possibility of fanning of the spring leaves is prevented by improvements in the three forward clips which hold the spring leaves together. These clips, which are of the clinch type, are much stronger than before, being of heavier gauge material, 1/4" wider. These clips provide greater resistance to opening under spring flexure, thereby maintaining the alignment of the spring leaves.

COMPARATIVE SPECIFICATIONS

	1935	1936
Front spring stops	Single	Double
Stop taken on	Shackle pin	Spring eye
Clinch clip thickness	5/32"	3/16"
Clinch clip width	3/4"	1"

WHEELS

The wire wheels of the HALF TON trucks are made stronger and more rigid by an increase in the metal thickness of the rim from .130" to .156" and by a new design of the forty-eight spoke holes, to provide stronger and more rigid riveting of the spokes to the rim. The Chevrolet monogram on the hub cap is enlarged to improve the hub cap appearance. The length of the monogram is 2 1/4", instead of 1 7/8". Due to enlargement of the rear wheel hubs of the 1 1/2 TON truck "full-floating" rear axle, the hub bore of all wheels, both front and rear, the wheel bolt rings and the front wheel hub are increased to 4 3/4" in diameter, an enlargement of 1/2".

RIM CLAMP RINGS

The split wheel rim clamp rings, which were optional with continuous rings early in the past season on 1 1/2 TON truck wheels, are discontinued. Continuous clamp rings only are now furnished.

This type of clamp ring is simple in design and easy to remove or apply. The continuous construction of both its base and flange form a perfect support entirely around the tire. There is no tendency to misalignment, due to mismatched ends and no local weakness or yielding of the flange that may occur in split clamp rings. These features give greater rigidity, eliminate localized deflection and provide proper conditions to enable the tires to travel more miles.

FRONT WHEEL HUB

Early in the 1935 season, the front wheel hubs, bearings and spindles of the 1 1/2 TON truck were redesigned for greater strength. The front wheel hubs were made stronger by the addition of an inner flange and formed ribs on the body between the wheel flange and the drum flange. Greater capacity was provided in both the inner and outer wheel bearings by the use of a larger number of balls of slightly smaller diameter, to provide more bearing contact.

FRONT WHEEL SPINDLES

On the spindles, the diameters of the inner and outer bearing seats and the tapered portion of the spindle, which interconnects these, are machined for uniform section. A greater increase in the diameter of the shoulder, where each spindle connects to its steering knuckle, strengthens the entire forging, preventing breaking under overloading at this point.

DUAL WHEEL SPACER

The spacer used with 6.50-20, 6 ply tires, when dual rear wheel equipment is furnished on the 1 1/2 TON trucks is redesigned. The outer wheel now pilots on the hub of the "full-floating" rear axle, instead of on the spacer, as before. This arrangement provides a longer and better pilot, which greatly facilitates the interchanging of wheels.

WHEEL CARRIER

The fender well wheel carriers of both the HALF TON and 1 1/2 TON trucks are stronger and neater in appearance, due to changes in design late in the 1935 season.

The upper brace of the wheel carrier tie bolt to the cowl is entirely redesigned, so that it does not contact the cowl panel, thus preventing cracking of the panel by movement of the carrier. In this new design, a channel section steel reinforcement, located inside of

the cowl, is bolted at three places to the dash and at two to the door front pillar. A short, neat and sturdy, drop-forged brace, bolted by an integral stud to this reinforcement, through a large clearance hole in the cowl panel, extends outward to brace the wheel carrier tie bolt that extends upward from the fender. The clearance hole, which is large enough so that the brace does not contact the metal of the cowl panel, is hidden by a ferrule under the inner shoulder of the brace. The carrier tie-bolt is offset, so that its upper end is closer to the wheel. At this end, it passes through a boss in the outer end of the upper brace, where it is held by sleeve bolt and nut in a strong and rigid attachment that prevents rattling.

A stronger and more rigid support for the wheel is provided by the addition of a strong support bracket at the fender. This bracket is a heavy steel stamping, bolted at four places to the fender behind the wheel center.

COMPARATIVE SPECIFICATIONS

	1935	1936
HALF TON TRUCK:-		
Wheel rim metal thickness	.130"	.156"
Hub cap monogram length	1 7/8"	2 1/4"
1 1/2 TON TRUCKS:-		
Wheel pilot diameter	4 1/4"	4 3/4"
Wheel rim clamping type	Optional-split or continuous	Continuous only
Front wheel inner bearing	11 balls, 9/16" dia.	12 balls, 17/32" dia.
Front wheel outer bearing	9 balls, 15/32" dia.	10 balls, 7/16" dia.
Front wheel inner bearing I.D.	1 5/16"	1 13/32"
Front wheel outer bearing I.D.	3/4"	27/32"
Wheel carrier upper brace	Strap bolt through cowl bolts in two places to dash	Separate brace bolted to new cowl panel reinforcement
Cowl panel reinforcement	None	Heavy channel section steel stamping bolted to dash and door hinge pillar
Wheel support bracket	None	Heavy steel stamping

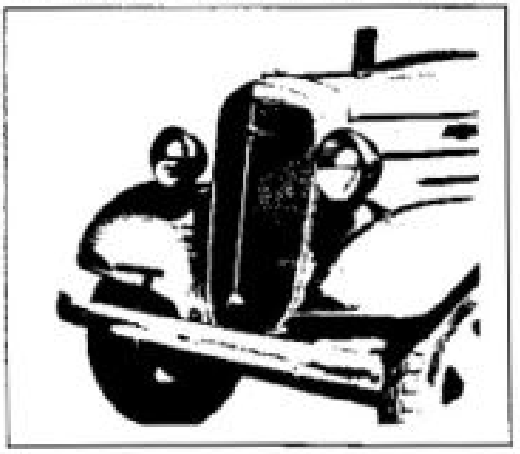
SHEET METAL

The radiator, hood, fenders and splash guard of any vehicle are largely responsible for its appearance and character. In the 1935 HALF TON and 1 1/2 TON trucks, a new treatment of these parts imparts an appearance of smart sturdiness, thoroughly in keeping with the structure and durable mechanism of these two lines of trucks.

RADIATOR

The sloping "V" radiator is made more massive by an increase in width at its base. Its shell is of composite finish. The shell proper is painted the same color as the hood, while the integral, embossed moulding which frames the grille is chrome-plated. The vertical bar "I" grille, which heretofore was black; the vertical center moulding which accentuates the "V" of the grille; and the starting crank hole cover, are all chrome-plated, creating a new, brighter frontal appearance.

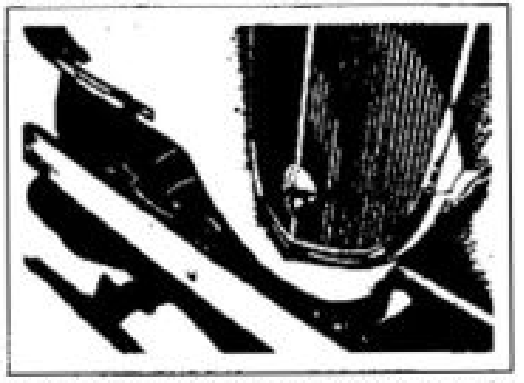
The blue Chevrolet emblem, now mounted on the body of the grille well below the grille frame, is effectively set off by an attractive disc-



like medallion in vermillion and chrome-plate. Slender, chrome-plated arms, tapering horizon-

tally from the medallion, add a touch of smartness.

The radiator splash guard, integral with the lower portion of the shell, is reshaped with



smoother lines which sweep cleanly into the front of the fenders.

HOOD

The hood side panels are restyled in the modern manner, to create an appearance of greater hood length. Two streamlined horizontal louvres, similar in design to those of the passenger cars, decorate each side panel. These louvres are of different lengths, the longer being located above. The upper portion of each louvre protrudes, while the lower portion is depressed in the panels. This treatment is so accomplished, that the protruding portion and the depressed portion beautifully balance

one another. The lower edge of the upper portion of each is striped with a painted line of color contrasting with that of the hood. A large Chevrolet emblem, located between the upper louvre and the side panel hinge moulding, adds to the smart appearance. Its embossed surfaces are chrome-plated upon a blue background.

The hood side panel reinforcement is redesigned to increase the panel rigidity and to reinforce the new louvres to prevent their vibration.

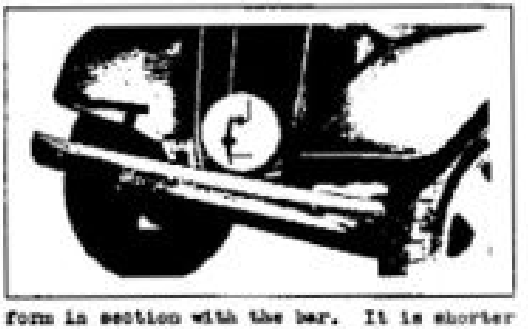
FRONT FENDERS

The front fenders are more streamlined in design and greatly improved in appearance. At the front of each, the nose extends lower to conceal more of the chassis mechanism, while

attractive valances, blending into the running boards, hide the mechanism from the sides.

BUMPER

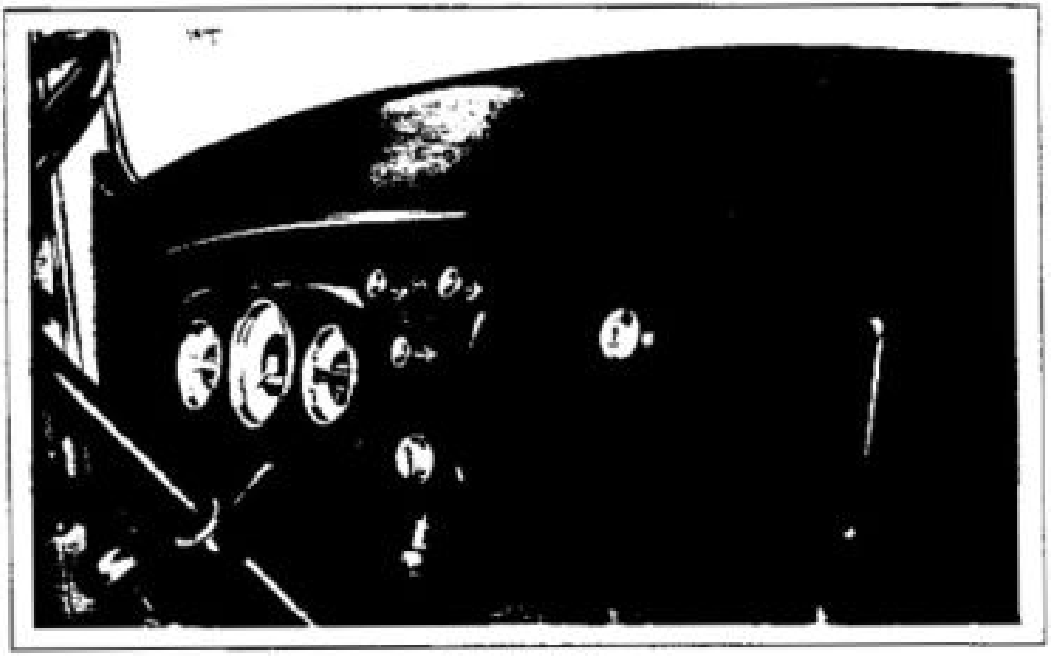
On the 1 1/2 TON trucks, the addition of a chrome-plated, spring steel bumper bar, bolted to the front of the frame, improves the appearance to a great extent, provides more protection for the fenders, reinforces the frame front end, providing more rigidity and adds a cushion against shock. The new bumper bar is of convex section and is 62" long, adding 3" more protection at each side. It is 4" deep, which is 7/8" deeper than the former bumper. It bows inward gradually from the car center, so that the outer ends are close enough to the fenders to prevent hooking. The former front bumper now acts as a brace for the bumper bar and is redesigned to con-



form in section with the bar. It is shorter than before, providing an overhang for the bar of 7 3/4" at each side. Three equally spaced carriage bolts, with stainless steel capped heads, attach the bar to this bumper. They may be removed easily, thus facilitating replacement of the bar.

COMPARATIVE SPECIFICATIONS

	1935	1936
Radiator shell finish	Painted hood color	Chrome-plated grille frame and painted shell
Radiator grille finish	Black	Chrome-plated
Radiator Chevrolet emblem location	On radiator shell	On body of grille
Chevrolet emblem finish	Blue and white	Blue on vermillion disc
		Chrome-plated side arms
Hood louvres in each side panel	Four vertical louvres	Two streamlined horizontal louvres
Hood Chevrolet emblem	None	Chrome-plate and blue
Front fender valances	None	Streamlined
FRONT BUMPER- 1 1/2 TON TRUCKS		
Bumper type	Rigid frame member	Flexible bar bolted to rigid frame member
Bumper finish	Black enamel	Chrome-plate
Bumper width	56"	62"
Bumper section	Channel 5/32" x 3 1/8" x 1 3/4" flanges	Convex 9/32" x 4" reinforced by channel section 1/8" x 3" x 1 3/8" upper flange x 2" lower flange



INSTRUMENTS

INSTRUMENT PANEL

The instrument panel of both the HALF TON and 1 1/2 TON trucks is entirely different and is greatly improved in appearance. In the new design, the instruments are located in a raised portion of the main panel in front of the driver; the controls are grouped at the center of the main panel, while a package compartment is provided at the right. The raised portion which carries the instruments, the compartment door and the main panel are finished in brown paint to match the upholstery.

The instruments are all MASTER passenger instruments in three groups, which are attached individually to the instrument panel. The package compartment, of the same size as that of the MASTER, is a safe receptacle, since its walls are of water-proof material, lined with fabric and there is a lock in its chrome-plated knob.

The throttle, light and choke controls and ignition lock are accessibly located between the instrument groups and the compartment, with the controls in a triangular arrangement above the ignition lock. The buttons of these controls are jet black bakelite with cream figures.

INSTRUMENTS

The instruments consist of the speedometer at the center, fuel and water temperature gauges combined in one instrument at the left and the combined ammeter and oil pressure gauge at the right. In comparison with previous truck instruments, these are much improved. The speedometer is over one inch larger in diameter and has much larger figures. All of the instruments are set deeper into the panel and each is framed by a narrow, chrome-plated rim of sharp "V" section.

The figures and graduations upon the dials are more pleasing in shape and more easily read. They are colored jet black upon an ivory background. A large jet black target at the center of each dial directs the eye to the figures, facilitating reading. The pointers are reshaped and are of the same red color as on the MASTER passenger car, which causes them to stand out sharply.

The instruments are effectively illuminated by two bulbs at the back of the panel, located above and between the three instrument groups and by an improved distribution of light over the surface of each instrument, effected by the saucer shape of the new dials. The windows, through which the light shines on the instrument dials, are narrower on all instruments and are covered with clear pyralin. The length of the lighting windows is reduced on the speedometer and increased on the other instruments to aid in the more effective distribution of light. The lens of each instrument is concave, instead of convex, to eliminate reflections.

IGNITION AND DOOR LOCK KEY

The lock tumblers used in the ignition and right front door locks of all cabs and closed truck models are identical and are opened by the same key. The same system of numbering, used for the past year on the passenger cars, is now used for this key.

The removal number tab, which permits only the owner and maker to have knowledge of the key number, is pressed into the body of the key at the point where the hole for the key ring is generally located. After the owner has made a record of this number, he may easily remove the tab from the key, leaving a hole for his key ring.

COMPARATIVE SPECIFICATIONS

	1935	1936
Instrument panel finish	Black	Brown
Instrument location	At center of panel	In front of driver
Package compartment size	None	4 3/4" x 12 3/4" x 9 1/2"
Instrument attachment	On common carrier	Separate
Instrument rim	None	Chrome-plated
Speedometer diameter	3"	4 1/8"
Instrument dial finish	White figures and pointers on black	Black figures & target on ivory; red pointers
Dial shape	Flat	Concave
Lens shape	Convex	Concave
Instrument windows	Light blue pyralin	Clear pyralin
Ignition and door lock keys	Separate keys	Same key for both

ELECTRICAL

Several important improvements are made in the electrical equipment of both the HALF TON and 1 1/2 TON trucks.

VENTILATED GENERATOR

The generator is the same ventilated generator used on the STANDARD Passenger cars. It operates more efficiently than the previous truck generator. Its temperature stabilized at about eighty degrees above that of the atmosphere, so that under normal operating conditions, there is no possibility

of its burning out.

BATTERY AND GROUND CIRCUIT

As on the MASTER and STANDARD Passenger cars, the truck batteries are redesigned with the negative terminal at the rear inner corner of the battery. This is the general practice and therefore any standard make of battery may be used. The batteries for all trucks are grounded directly to the power-plant by means of a ground strap bolted to the transmission rear bearing retainer on the HALF TON trucks and to the forward universal ball joint collar on the 1 1/2 TON trucks. In both cases, the number of joints is decreased from four to two. This improves the cold weather starting, as on the passenger cars.

COMPARATIVE SPECIFICATIONS

	1935	1936
Generator type	Not ventilated	Ventilated
Generator stabilizing temperature	None	80 degrees F above atmosphere
Breaks in battery to ground circuit	4	2

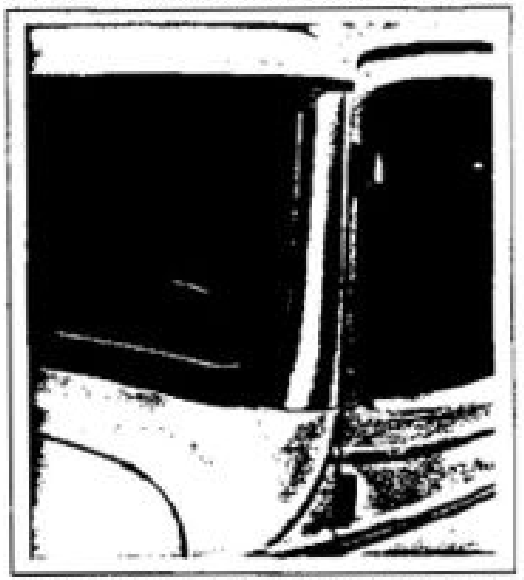
CAB AND BODIES

Many refinements are made for 1936 in the cab and enclosed bodies of both the HALF TON and 1 1/2 TON truck lines.

The windshield is improved in appearance by a redesign of its lower corners. These are now rounded with a large radius, instead of being pointed, as heretofore.

Shortly after the beginning of production, the cab doors and the side doors of the other bodies will be constructed entirely of steel instead of the usual composite steel and hardwood construction. This design provides great strength and overcomes any tendency of the door to loosen and rattle.

The entire interior of the cab is trimmed.



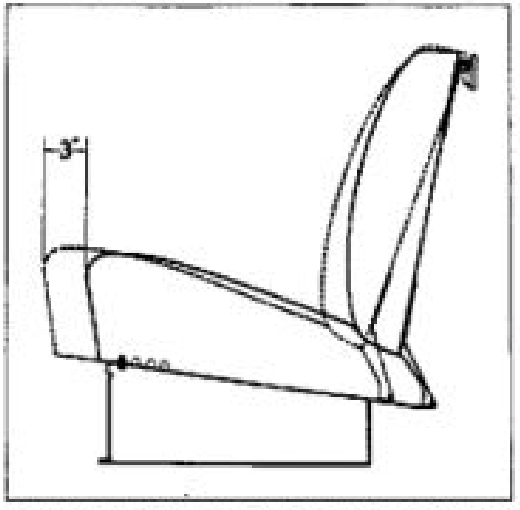
The seat and back cushions and the rear and side panels are trimmed in brown, crushed-grain, imitation leather of a very high quality. The ceiling is covered by a panel which is colored and grained to match the trim of the seats. Heavy jute above this panel insulates against heat and noise. The trim panels of the doors are of the same brown color as the instrument

panel. Panels of embossed board matching the trim are added at each side of the cowl.

The seats of the other enclosed truck bodies are trimmed in the same brown material as the

cab, while the door trim panels are also painted brown.

In the cab, driving comfort is improved considerably by the addition of a seat and back



adjustment, which permits the seat and back to be located in four different positions for a total adjustment of three inches.

SUBURBAN CARRYALL BODY

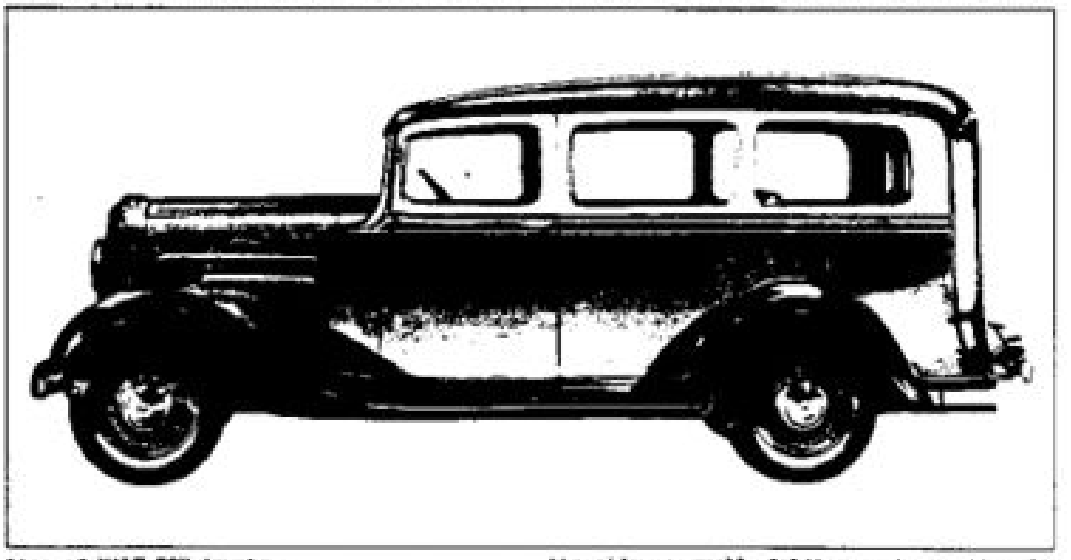
Late in the 1935 season, the Suburban Carryall, or Station Wagon, body was added to the line of HALF TON trucks.

This body is the only completely enclosed station wagon built at this time. It is designed to be used as a passenger carrying vehicle or to carry loads of merchandise or produce. It also can be used to serve many other purposes. It is in great demand by estates, hotels, country clubs, transfer companies, short line bus companies and schools. It is an ideal car for camping tourists and for the man in a small business who cannot afford two cars. It is mounted on the special HALF TON truck chassis which incorporates all the new features of the HALF TON truck and includes the additional appearance features of wire wheels with chrome-plated hub caps, chrome-plated head lamps and bumpers and full-length running boards.

The body is identical in size and contour with the HALF TON truck panel body and seats eight passengers comfortably. When desired, the seats for the passengers may be easily removed to provide a load space equal to that of the HALF TON panel truck.

Three large windows at each side, two windows in the rear door and the large windshield provide exceptional visibility. All side windows open by crank handles, to provide more than adequate ventilation. All windows are carefully sealed, so that when closed the passengers are well protected.

There are four seats in this body. The driver's seat is exceptionally wide, providing room for both the driver and a passenger. At its side, a small folding seat permits the entrance of passengers to the rear seats. The second seat accommodates two people. An aisle



at its right side permits access to the third seat, which seats three people.
All seat cushions and backs are upholstered in brown, crushed-grain imitation leather of high quality.
Both the second and third seats are fastened to the body floor by four wing screws each. These screws are easily loosened by hand to permit the removal of the seats.
The rear door is divided into two portions, an upper door which hinges at the top and a tail gate that hinges at the bottom.
The upper door permits loading when the seats are removed. It is spring balanced, opening part way automatically when its handle is turned, after which it is lifted upward until it is in a horizontal position, where it is locked by a lock arrangement in a brace at the right side. It may be closed with ease and safety. When closing, the lock is unlatched, after which the door falls to a partially opened position from which it may be slammed shut. It is hinged on the rear opening pillars by an invisible hinge located a short distance below the top of the opening.
The lower door is hinged at the bottom on a piano type hinge. When open, it is supported by two heavy chains, one at each side. Waterproofed cloth covering the chains protects them from rust.
The lower door, or tail gate, is exceptionally strong and may be used to carry small trunks or luggage.
Within the body, metal panels extending from the floor to the windows increase the durability of the interior.
Two rear view mirrors are furnished. These are the regular swivel type mirror on the windshield header bar and a special mirror mounted on the upper hinge of the left door. An adjustable internal sun shade provides additional protection for the driver's eyes.
In all other respects, this new body is identical with the HALF TON truck panel body.

COMPARATIVE SPECIFICATIONS

	1935	1936
CAB:		
Windshield lower corners	Sharp	Rounded
Door construction	Steel and wood	All-steel
Interior trim	On seats, seat backs and ceiling	On seats, seat backs, rear and side panels, ceiling and cowl
Seat trim material	Green imitation leather	Brown crushed grain imitation leather
Door trim panel and instrument panel finish.	Black	Brown
Seat adjustment	None	Seat cushion and back adjustable- 3"
TRUCK BODIES:		
Windshield lower corner	Sharp	Rounded
Door construction	Steel and wood	All-steel
Seat trim material	Green imitation leather	Brown crushed grain imitation leather
Door trim panel and instrument panel finish.	Black	Brown

SPECIAL EQUIPMENT

The following new special equipment is available, at extra cost, for use on the HALF TON or 1 1/2 TON trucks, as indicated.

STEEL WHEELS AND OVERSIZE TIRES

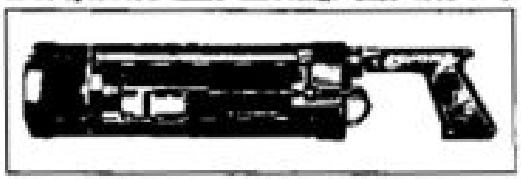
On the HALF TON trucks, a combination of pressed steel wheels of the MASTER passenger type, with low pressure 7.50-15, 6 ply oversize tires, is available as special equipment.
This combination is very suitable for models in which fragile goods are carried, especially in delivery service. The massive appearance is attractive.
As only sixteen pounds of air are used in the tires, they absorb more vibrations, provide a better ride and last longer.

AUXILIARY SPRING

The auxiliary spring, available on the 1 1/2 TON trucks as special equipment with dual wheel installations, is redesigned along more simple lines. There are only six leaves, instead of eight and these are of greater thickness. This reduces the spring weight over seven pounds and increases the spring rate of deflection from 1520 pounds per inch to 1610.

FIRE EXTINGUISHER

The fire extinguishers available for both truck models are all improved in design. The most outstanding is the new "pistol grip" extinguisher, which is one of the most accurate shooting pump-type extinguishers made. It has features that insure efficiency, dependability, longer life and lower maintenance costs. It is very efficient, because it works instantly; it shoots all of its chemical straight at the fire; and, it may be used in places where pumping would be impossible. The extinguisher shoots straight, because the pump does not have to be operated while shooting. This does away



with the previous difficulty of trying to aim and pump at the same time and therefore the stream of chemical goes directly to the fire. It takes less chemical to put out a fire, because all the chemical can be placed where it will do the most good. The maintenance cost is low, because the extinguisher, itself, is air-tight, thus preventing leakage or evaporation of the chemical. The only expense is refilling when the chemical has been used. The air pump operates easily and has the capacity to build up air pressure to shoot a continuous stream of chemical a distance of thirty feet or more. As it is an air pump, not a liquid pump, the pump handle, shaped like that of a piston, is free at all times. The trigger, simple in design and positive in action, releases a shut-off valve, causing air pressure to shoot the chemical out of the extinguisher. When the trigger is released, a spring closes the valve and the chemical is shut off instantly.

The pick-up tubes, which extend from end to end inside of the extinguisher, are connected to the pick-up bracket assembly, which oscillates easily on a central axis, permitting the tubes to be at points where the chemical is lowest. A die-cast ring holds the air pump and pickup bracket assembly in perfect alignment. The discharge nozzle does not protrude, but is recessed in the end of the extinguisher.

FAN SHROUD

Late in the 1935 season, a fan shroud was made available at extra cost for use on both HALF TON and 1 1/2 TON trucks. This shroud consists of a sheet metal shield, located to the back of the radiator core above the fan and a large diameter sheet metal cylinder around the fan. At slow, lugging speeds, this shroud provides good cooling by assuring air circulation thru that portion of the core above the fan, which at these speeds is normally unaffected by road speed air flow.

OIL TEMPERATURE REGULATOR

The same oil temperature regulator furnished as special equipment on the passenger cars is available at extra cost on both lines of trucks. It cools the engine oil in warm weather and heats it in cold weather, thereby improving truck performance and making operation more economical.

MASTER PASSENGER CARS C- continued

MASTER PASSENGER CARS-- Continued

MASTER PASSENGER CARS-- Continued

STANDARD PASSENGER CARS

STANDARD PASSENGER CARS-- Continued

F- continued

G

H

I

J

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L

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N

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P

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STANDARD PASSENGER CARS-- Continued

HALF TON TRUCKS

HALF TON TRUCK- Continued

C- continued

D

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T

ONE AND ONE HALF TON TRUCKS

1 1/2 TON TRUCK- Continued