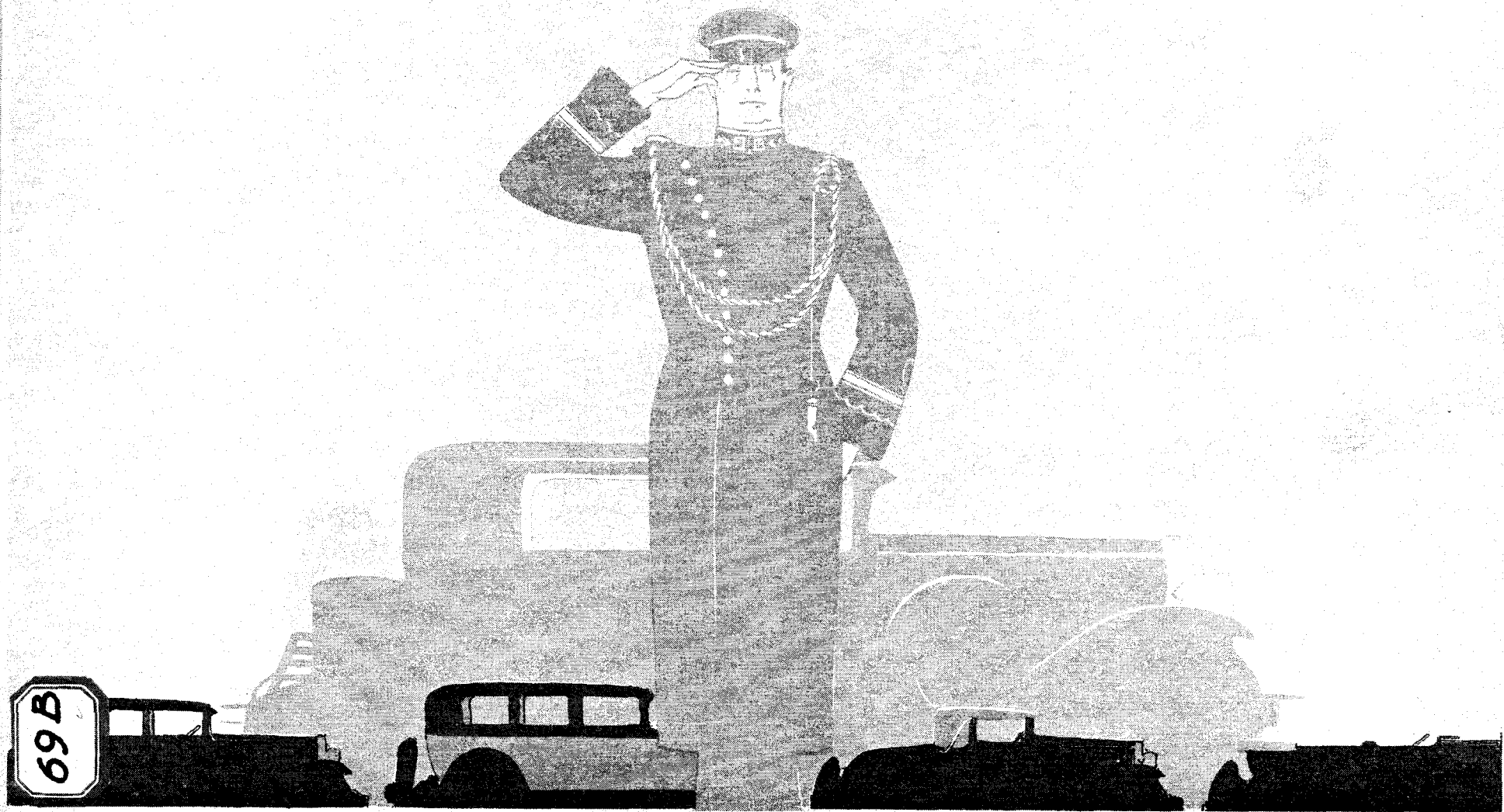


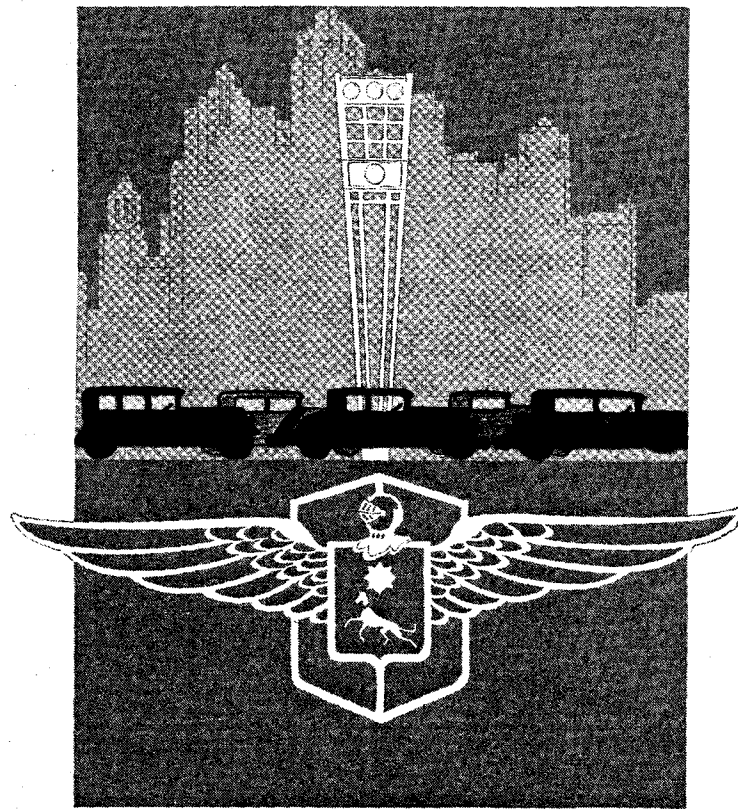
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NEW LA SALLE PRESENTATIONS



NEW LA SALLE PRESENTATIONS



CADILLAC MOTOR CAR COMPANY
DETROIT

SUPREMELY FINE PERFORMANCE

AND SURPASSING CHARM
ARE COMBINED IN THE NEW LASALLE

EMBODYING striking advancements not only in beauty and luxury but in performance as well, the new La Salle presentations secure still more firmly La Salle's dominant position in the fine car field.

Study the new LaSalle from whatever point of view you choose—lines, color blending, luxury, roominess, safety, power, speed—and notable development is apparent. On a foundation of well-established success, LaSalle has built a still more significant motoring achievement.

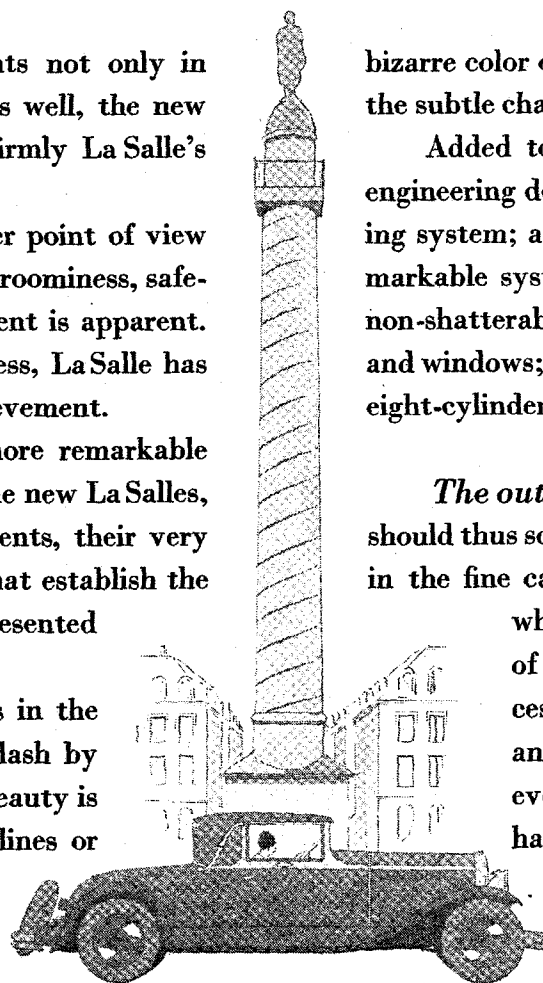
This achievement becomes all the more remarkable when La Salle prices are considered. For the new La Salles, with all their refinements and improvements, their very evident plus-value are offered at prices that establish the La Salle as the greatest dollar value ever presented in the quality car field.

Whether you inspect these new cars in the showroom or merely view them as they flash by on street or highway, their captivating beauty is equally apparent. There are no freakish lines or

bizarre color effects to catch the eye; but there is, instead, the subtle charm of authentic styling and good taste.

Added to LaSalle beauty is a wealth of important engineering developments; a completely harmonized steering system; a silent-shift Syncro-Mesh transmission; a remarkable system of safety-mechanical four-wheel brakes; non-shatterable Security-Plate glass in windshields, doors, and windows; and a still more smooth and powerful V-type, eight-cylinder engine.

The outcome of success . . . That the new La Salle should thus so unquestionably continue its place as a leader in the fine car field is only natural. The developments which place it in the forefront of the fine cars of the day are the logical outcome of past success. Never before did any fine car so quickly and so thoroughly establish itself as La Salle. In every respect it was a car such as thousands had been waiting for—a car of today, for today;





All operations in building the La Salle are held to the closest limits of accuracy. Skilled craftsmen check the gauges used throughout the plant by means of the famous Johannson gauge blocks

a car that brought fresh, appealing beauty to the motoring world along with performance standards based on principles proved by years of superiority.

LaSalle steadily maintained this wide popularity which it so quickly won. Built on basically correct principles, it was logically developed so that its performance became still more phenomenal, still more truly representative of everything that a Cadillac-built car means. In style, too, the La Salle continued to maintain the standard which exerted such an influence on motor car styles.

With this background, therefore, the new LaSalle presentations naturally commend themselves to all those who appreciate truly fine car standards, both in style and in performance. To drive one of them is a thrilling pleasure that reveals qualities no amount of description can convey—it is an experience that is a most enjoyable reminder of what really zestful motoring can be.

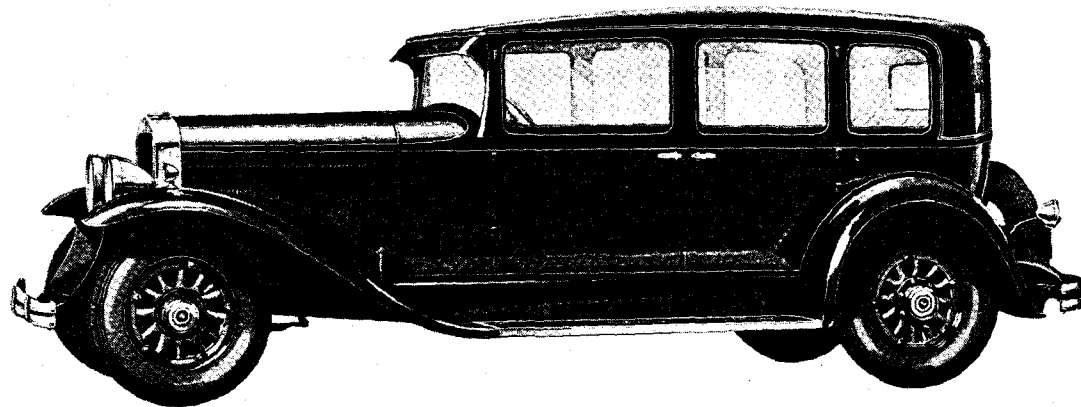
The new LaSalle body styles represent the supreme achievement of the world's greatest body builders—Fisher and Fleetwood—working in close association with Cadillac-LaSalle engineers and the Art and Colour Section of General Motors. Refined, improved, given a newer, richer charm and beauty, they establish the new LaSalle still more firmly as style arbiter in the field of fine motor cars. In addition, the new LaSalle's are even more sturdily built and longer-lived and are quiet to an amazing degree.

Of the silent-shift Syncro-Mesh transmission, which is described fully in later pages, it is sufficient to say here that it adds to the pleasure and ease of driving in degrees that can be fully appreciated only by driving one of the new LaSalle's. Gears can be shifted at a touch, at any speed, without clashing, and get-away is silent, sure, and swift.

LaSalle safety-mechanical four-wheel brakes, also, are more fully described in ensuing pages. Operating on fifteen sets of roller bearings, they respond to the slightest pressure in a manner that is as smooth as it is sure.



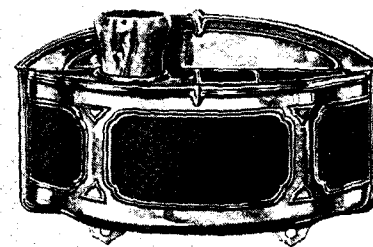
Every new LaSalle is conceived on the drawing board. Engineers design each part to perform its function, then the drawings are carefully considered before even a single experimental part is built

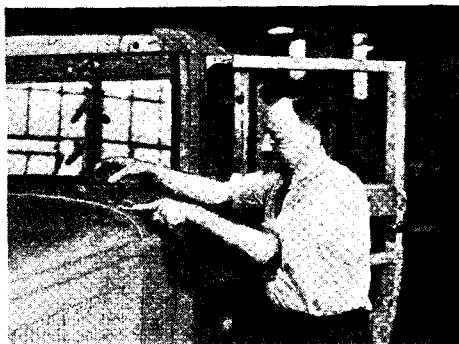


The LA SALLE Five-Passenger Sedan

The characteristic roominess of this La Salle affords luxury that only a fine car can offer. The wide rear seat will accommodate three persons without crowding. Powered with a V-type, eight-cylinder engine and combining such features as the Syncro-Mesh transmission, harmonized steering system, safety-mechanical four-wheel brakes, and Security-Plate glass in the windshield and all doors and windows, this car, like all La Salles, is superlative value. Its distinctive lines reveal the finest developments of authentically styled coachcraft, and its colors achieve beauty that is both individual and enduring.

The smoking set is typical of many refinements that characterize the luxury of the new La Salle. It is made of metal with an inset matching the upholstery. A vanity case matches the smoking set and is equipped with a memo pad, pencil, and mirror





Full size clay models are made for different body models. As a result, Cadillac-La Salle engineers may visualize and examine a finished car before the dies are made

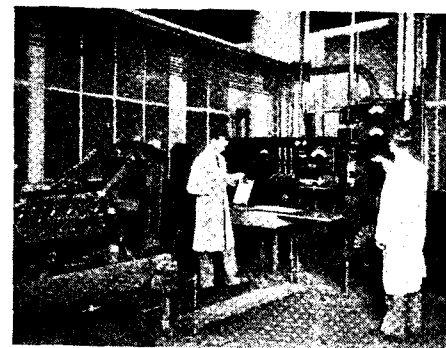
Increased safety in steering . . LaSalle safety is still further increased by a completely harmonized steering system embodying a steering modulator, mounted on the forward end of the left front spring.

High speed has become the rule, and at high speeds even the best of ordinary steering mechanisms are insufficient. Cadillac-La Salle engineers, however, have met these new conditions with new developments, and the new LaSalle steering system assures positive control, reducing to an amazing minimum the shocks that are usually felt at high speeds. The most uneven roads may be traversed without effort or fatigue from driving.

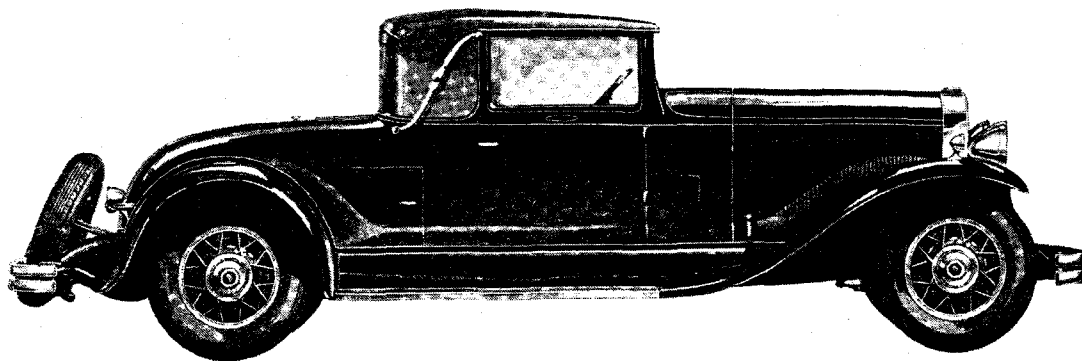
The LaSalle owner, therefore, can take full advantage of the wonderful power and speed potentialities in his car with the confidence and assurance of positive and instant control that means safety.

Authentic new motor car styles . . La Salle designers, co-operating with the Art and Colour Section of General Motors and with the Fisher Body Corporation, have produced beautiful new body styles in which graceful lines and rich coloring combine to produce an effect of aristocratic beauty. In addition, the La Salle is offered in a number of exquisite custom bodies by Fleetwood.

Innumerable details contribute to this result. For example, the center of gravity is lower, emphasizing the powerful, low-swung appearance that is so desired in a fine car today. The fenders are lower. The body mouldings extend to the end of the hood, accentuating the distinctive streamline effect. A valance with four chromium bands covers the gas tank and frame members and blends smoothly with the lines of the car, giving a trim, tailored effect to the rear. Eighteen-gauge steel is employed throughout for all body panels. This not only adds to the safety, strength, and rigidity of the whole car, keeping the body free from noise, but it also provides an absolutely smooth surface, free from waves, which brings out the full beauty of the lustrous Duco finish.



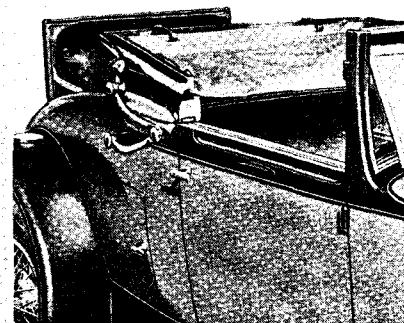
La Salle engines are developed in the Cadillac-La Salle Research Laboratories where they are carefully tested and must prove their mettle before being released for production. The picture shows one of the tests

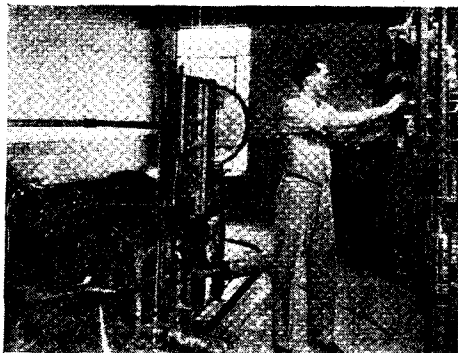


The excellence of La Salle craftsmanship is revealed by this view of the Convertible Coupe top. The folding mechanism, which makes the top fully collapsible, is completely concealed by the lining. With the top down or up, the car presents an equally neat and attractive appearance

The LA SALLE Two-Passenger Convertible Coupe

Combining the advantages of the open and the closed car in a way that results in unusually smart appearance, this new La Salle is deservedly popular. Its top is fully collapsible with concealed folding mechanism. Unusual comfort for two extra passengers is provided in the roomy rear deck. The rear deck seat has arm rests and there is a comfortable foot rail. Other distinctive features include an adjustable seat, inset instrument board, ash tray, and scores of other details that make the ownership of a fine car so desirable. The windows and windshield are made of non-shatterable Security-Plate glass.





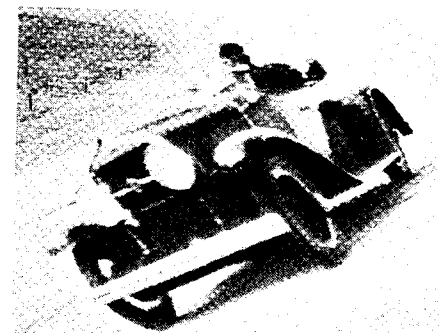
Many of the important developments pioneered by Cadillac-La Salle have been tried out in the dynamometer rooms of the General Motors Research Laboratories

Special and exclusive features are to be found throughout the whole construction of these Fisher bodies. The inside body panels, for instance, are sprayed with emulsified asphaltum before being trimmed. This eliminates the tendency of body panels to act as sounding boards that magnify minute noises into annoying rumbles. It also helps to maintain the temperature of the interior of the car at a comfortable point, as it acts as an insulator for heat.

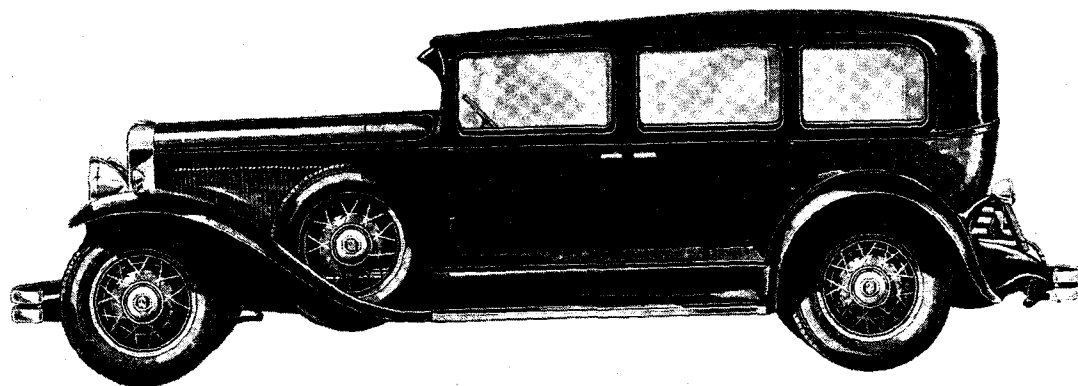
All metal parts throughout the entire body are separated by an anti-squeak material. Fenders and other sheet metal parts are also separated to eliminate the rattles and annoying squeaks that are usually heard when metal-to-metal contact occurs. Special rubber shims are provided between the frame and the body for this purpose.

The rear sills of the body are strengthened and stiffened to provide additional strength and stability for the entire body frame, and for the chassis. All joints are of the mortise and tenon type, securely glued, and bolts instead of screws are used wherever possible. Non-shatterable Security-Plate glass is used in the windshield and in all doors and windows. It provides a factor of safety that is of the utmost importance. It insures maximum protection in case of accident or collision, for the glass will not fly into fragments. This eliminates the hazard of injury from flying glass.

The Fisher VV windshield is a new sloping type which deflects the glare from approaching headlights in the rear, making driving much safer and more pleasant for driver and passengers. Roofs of the La Salle Fisher bodies are formed from two-inch slats of selected wood, placed two inches apart. This construction eliminates weaving and assures quietness. As a further protection against noise, the slats are set on friction tape where they join the cross bars. Strips of band iron are placed at the front of the slats to hold them securely. The side roof quarter panels are metal covered, giving a pleasing effect and adding considerably to the rigidity of the body. The center portion of the roofs is covered by a water-proof fabric.



After the engine has proved its mettle, it is placed in a test car and driven thousands of miles at high speeds at the General Motors Proving Ground, where any faults in engine or chassis are revealed

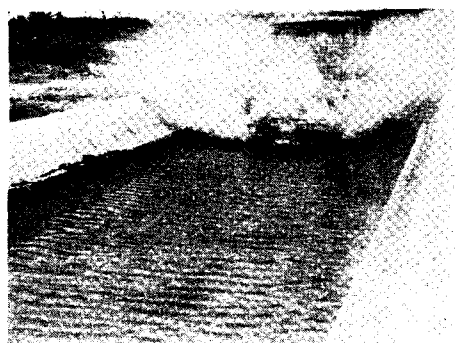


Arm rests are among the many features of comfort in the La Salle. Ample in width and deeply padded, they offer restful support, particularly on long drives, and add greatly to the pleasure of riding. They typify the careful attention that La Salle designers give to details of motoring satisfaction

The LaSALLE Seven-Passenger Sedan

The supreme coachcraft that marks all the new La Salles is apparent in this luxuriously roomy model. Its rich colors and its distinctive lines, accentuated by a moulding extending from the belt line over the hood to the radiator, mark it at a glance as a truly fine car. The interior is equally inviting. The deep, comfortable seats are covered with the finest grade of mohair, set off by fittings of special La Salle design in bright silver finish. There are a vanity set with mirror, memo pad, pencil and ash tray, and a smoking set with ash tray and lighter. Both sets are of metal, inset with upholstery fabric. The instrument board is deeply inset and has a handsome nickel edging.





The bathtub. La Salle test cars drive through water 30 inches deep at General Motors Proving Ground to insure that brakes function properly and that water will not interfere with ignition or carburetor. All these tests are made so that you may obtain satisfactory performance under all conditions

The luxury of La Salle . . . The rich appearance which makes the ownership of a fine car so desirable is just as apparent in the interior of the La Salle bodies as on the exterior. It bespeaks the inviting luxury that definitely distinguishes a fine car from other automobiles. Mounted on a wheelbase of 134 inches, and on wider and sturdier frames, the bodies of the new La Salle have been designed to afford the spaciousness that is so essential to real luxury. A further contribution to this roominess is made by inseting the instrument panel into the cowl.

High-grade mohair upholstery of rare beauty covers the wide, deeply cushioned seats; broadcloth and whipcord are optional.

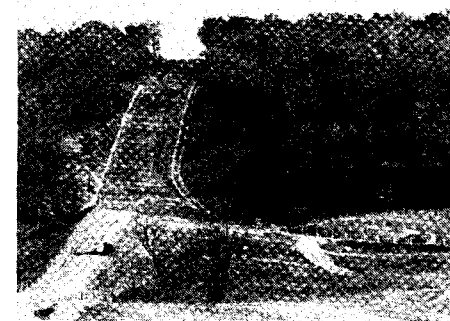
Every detail of the La Salle interiors is in keeping with these high standards, including the fittings which are of special La Salle design with bright silver finish. A vanity case contains a mirror, memo pad, pencil, and ash tray, and a smoking set consists of two ash trays with a cigar lighter. These exquisitely designed cases are of metal, inset with

upholstery fabric. The general effect is that of a handsomely furnished room, which holds equal charm for the temporary guest as well as for the owner who spends many days in it.

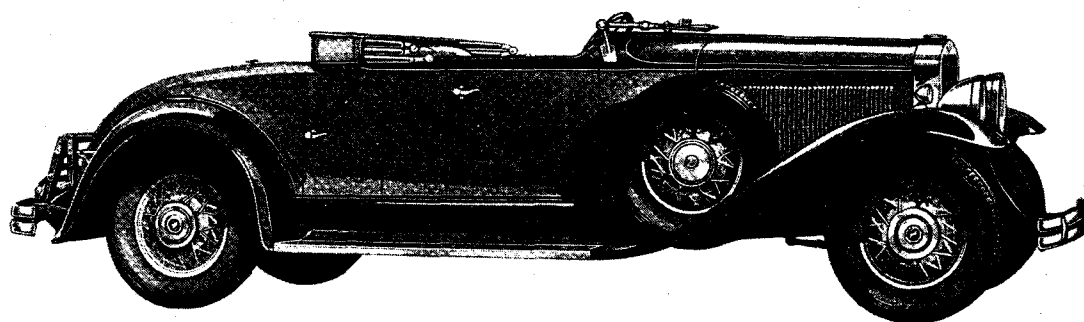
Fleetwood Special Custom bodies . . . The Fleetwood bodies in the new La Salle line embrace all the fine craftsmanship and traditions long associated with the creations of the Fleetwood Body Corporation. They are the finest examples of the coach builder's art, and represent the utmost in style, individuality, exclusiveness, and luxury.

Several of the open car body styles are illustrated in this book. Special literature more fully describing these models will gladly be supplied by any Cadillac-La Salle dealer.

La Salle developments are preproved . . . All the developments in the new La Salle are the result of many months of experiment on the part of Cadillac-La Salle



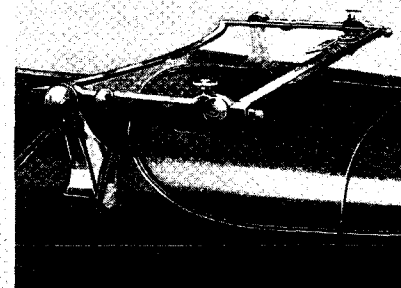
One of the many hills at the Proving Ground, far steeper than any you are likely to encounter. La Salle cars are driven thousands of miles over these hills before a new model is released

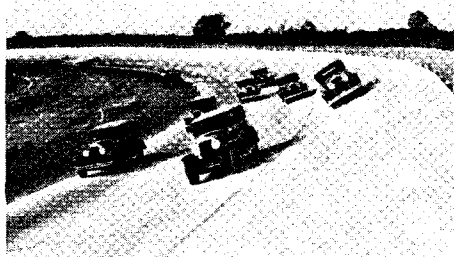


Folded down over the cowl the windshield gives an added effect of dash and smartness to the car. It is trimmed with lustrous chromium plate, and is fitted with an automatic wiper and a rear view mirror. When raised it can be swung forward from the top for ventilation

The LA SALLE-FLEETCLIFFE, Two-Passenger Roadster by Fleetwood

Like all the La Salle models, this Roadster with body by Fleetwood is built on a wheelbase of 134 inches, making it exceptionally roomy. The seat will easily accommodate three persons and two more passengers can be carried in the wide rumble seat. The top is a new design which folds very compactly. The inside of the top is completely lined, giving a tailored effect. The side curtains are a new type with a valance which completely seals the car against drafts. The windshield will swing forward at the top, or can be folded over the cowl. Cowl louvres are another feature that is shared with all the La Salle-Fleetwood open models.



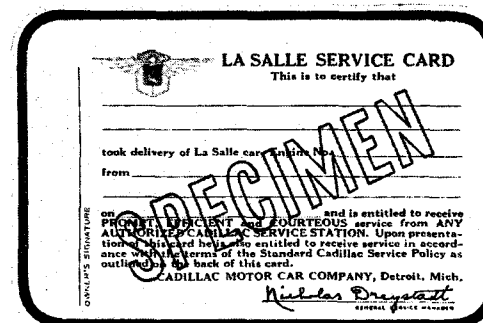


The General Motors high-speed track where durability and car performance are tested scientifically without guesswork

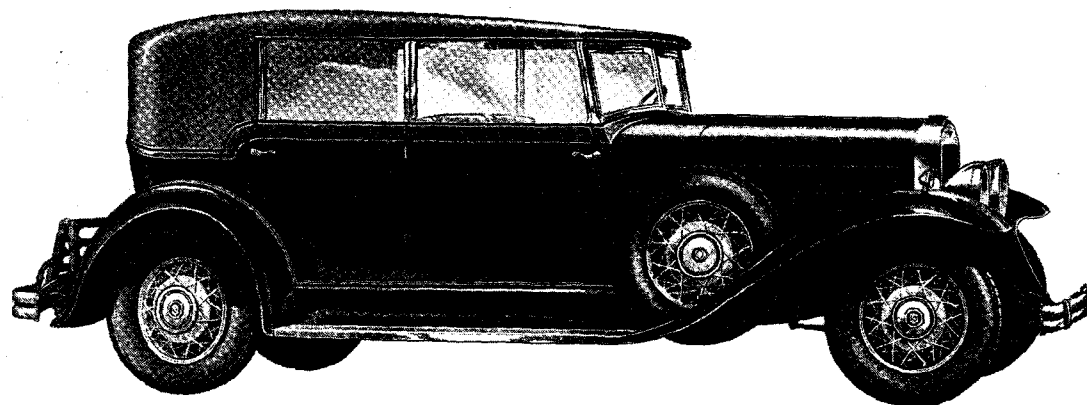
engineers, co-operating closely with the vast engineering Research Laboratories of General Motors. The finished work has been carefully tested and proved at the General Motors Proving Ground, the world's largest outdoor laboratory. The new La Salle comes to you preproved in every one of its mechanical features.

The economy of La Salle . . These are but a few of the points that make it desirable for you to fulfill your ambition of owning a fine car by purchasing a La Salle. They make the La Salle a true aristocrat of motordom; but at the same time, because of the long life which many of them help to assure for the car, they make the purchase of a La Salle the truest form of economy and wise buying. This matter of economy in the purchase of a fine car is strengthened by the Cadillac-La Salle service policy. The La Salle free adjustment period extends to 90 days, or 3000 miles of driving. Defective parts are replaced during one year, or 12,000 miles of driving, at no cost to the owner for either material or labor. Under this policy preventive maintenance service is also provided. By inspections at regular periods, the efficiency of your La Salle is maintained at its peak, and thousands of extra miles of pleasure are assured. Such economy, combined with complete motoring satisfaction, justifies you in purchasing now the fine car you have always wanted—the new La Salle.

The appeal of smooth power . . Its beauty, its luxury, its fine craftsmanship definitely mark the La Salle as a fine car; and for these reasons alone the slight extra cost is more than justified. But it is when the performance of the La Salle's famous V-type, eight-cylinder engine is added to these other qualities that the La Salle becomes irresistible. To appreciate the full significance of the La Salle engine, it is necessary to review briefly the development of the internal combustion engine. The first automobile engines consisted of one cylinder. Thereafter, for some years, advancement consisted largely in adding additional cylinders.



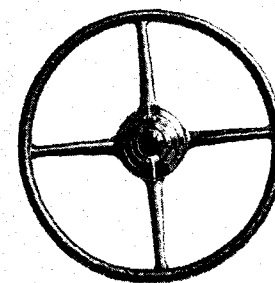
Nation-wide service is made available to La Salle owners through this card



The steering wheel of the La Salle is the comfortable, narrow-rim type, nineteen inches in diameter. The throttle and headlight controls in the center are a new design that will not entangle the driver's clothing should a sudden maneuver be made

The LASALLE-FLEETWAY, Four-Passenger All-Weather Phaeton by Fleetwood

Distinctiveness that characterizes all the creations of the Fleetwood Body Corporation is combined with an unusual degree of adaptability in this car. With top and side windows up it affords sedan comfort, and by simply raising a glass division concealed in the rear of the front seat it is given an Imperial effect for city driving. With the top down, this glass division serves as tonneau windshield or may be lowered out of sight. All pillars fold neatly within the body. The side windows may also be lowered and completely concealed. The top is covered with special burbank. There are ventilators in the top and sides of the cowl.





The X-ray provides another tool for the research engineer in his quest for more information on the internal structure of materials likely to be used in La Salle cars

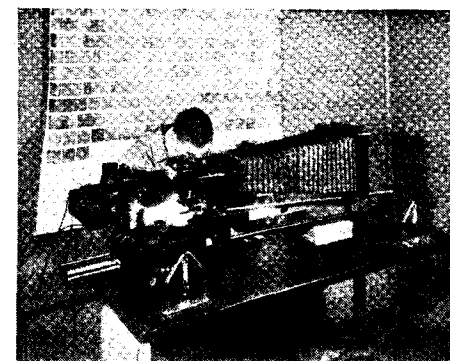
Establishing a new principle . . In 1914, however, Cadillac engineers pioneered a definite exception to this method. Extensive research and tests led them to the conclusion that motoring must find its ultimate development in the multiple-cylinder engine; but at the same time the engineers were convinced that the attaining of this goal by lengthening the engine would be unsound in practice. Accordingly, as the result of two years' intensive experiment, they produced a new type of engine—the Cadillac V-type eight. In effect, this was two four-cylinder engines set side by side at an angle. This principle achieved a compactness that was impossible by any other method.

The soundness of this principle has been amply demonstrated in the intervening years. Sales of Cadillac-built cars powered with this engine have exceeded the total volume of all other cars of the same price or higher. And the public has invested in them more than one and a half billion dollars, approximately one-third of which amount has been attained during the last four years. More convincing proof than this could hardly be offered.

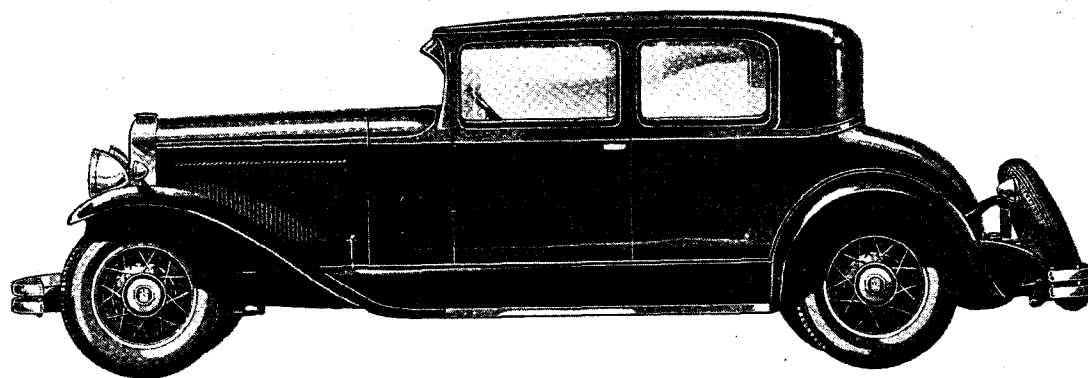
The compensated crankshaft . . The new V-type principle of engine construction was steadily developed by Cadillac, and soon a second epochal achievement was effected. The short crankshaft was constructed with compensating weights, so that its rotation became as smooth as that of a balanced flywheel. The results were: elimination of vibration, perfect inherent balance of all rotating parts, and the releasing of the full potentialities of the eight-cylinder engine.

The La Salle V-type engine is much shorter for its power capacity than eight-cylinder engines of other types, and, therefore, more compact and rigid, and more advantageously arranged for fuel distribution, cooling, and lubrication.

It is this type of engine, basically and inherently superior, that has been such a big contributing factor to the success of the Cadillac and La Salle.



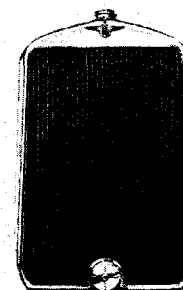
Photographing the structure of a piece of metal at the General Motors Research Laboratories under a microscope. This photomicroscope allows metallurgists to see what the metal looks like when magnified 6000 times

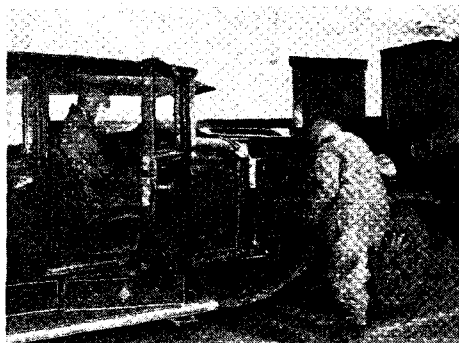


Unusually attractive in design, the LaSalle radiator is also unusually efficient in operation. It is the cellular type and has a large cooling area. The vertical shutters with which it is fitted are thermostatically controlled. They not only control the temperature of the water but also the temperature of the air under the hood, greatly reducing the "warming-up" period

The LA SALLE Five-Passenger Coupe

The distinctive appearance of a coupe is here combined with ample seating capacity for five passengers. The driver's seat is adjustable, and the seat beside it folds and tips to permit easy access to the rear seat. The instrument board being deeply inset permits the placing of control levers so that they do not interfere with entrance and exit from the driver's seat. There is a large luggage compartment in the rear deck. Both dome and corner lights are provided, the dome light automatically lighting when the door is opened. The smoking set is equipped with a lighter that can be detached and passed to any occupant of the car.





Testing cars in the cold of the arctic. In this General Motors cold room, engineers study the operation of cars and parts at temperatures as low as 50 degrees below zero

Seven fundamental advantages . . . In brief, the LaSalle V-type, eight-cylinder engine enjoys seven fundamental advantages, which a demonstration will quickly reveal to you.

1 **IT IS SHORT**—shorter than any other engine of equal displacement. The crankshaft and camshaft do not whip or vibrate under the twisting strain, and the crankcase is not easily deflected. The result is smooth, even power throughout the life of the car.

2 **THE LASALLE ENGINE IS SMOOTH-RUNNING.** The compensated crankshaft, driven by equally spaced, overlapping power impulses made possible by the V-type construction, rotates as smoothly as a balanced flywheel.

3 **BETTER CARBURETION AND FUEL DISTRIBUTION.** The LaSalle carburetor is placed in the space between the cylinder blocks. The gasoline, after being vaporized and heated, has only a short distance

to travel to the cylinders. Each cylinder, therefore, receives fuel of equal temperature and density. The result is smooth performance.

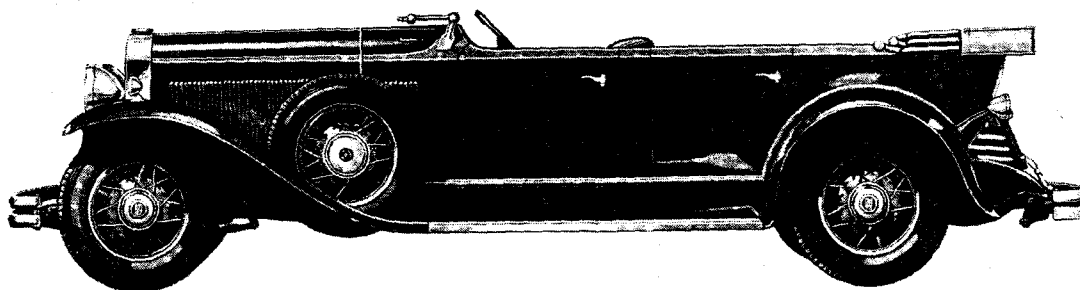
4 **SIMPLICITY.** Because of the V-type principle, the LaSalle engine contains a minimum of working parts. Due to the special crankshaft design, there are only three main bearings and only four crank throws. A single water pump and a single oil pump serve it with maximum efficiency, and a single short camshaft operates the valve lifters directly with no intervening parts.

5 **EFFICIENT COOLING.** Because the LaSalle engine is short and compact, there is only a small area to be cooled. A single water pump is able to maintain abundant circulation to assure uniform temperature.

6 **EFFICIENT LUBRICATION.** Because the LaSalle engine is short, only three main bearings for the crankshaft are required, compared to seven or more on other engine types. Furthermore, these bearings are of ample size and easily retain the oil that is pumped to them, whereas it is difficult to lubricate efficiently the numerous small bearings of other types of engines.



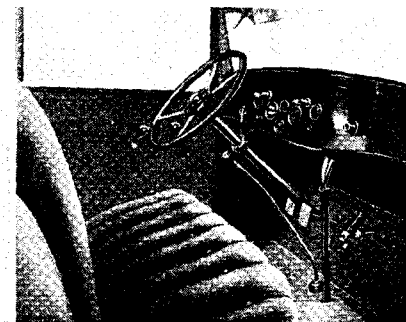
Workmen wear special clothes to protect them from the fine stream of sand blown under terrific pressure against each LaSalle crankcase, removing all scale and dirt before inspection and machining



The instrument board is deeply inset in the dash, thus providing added roominess in the driving compartment. The instruments are pleasingly spaced across it in positions where they can be most easily seen by the driver. A nickel edging adds appreciably to the good appearance

The LaSALLE-FLEETLANDS, Seven-Passenger Touring by Fleetwood

Here is an ideal car for the open road. Its body by Fleetwood is richly attractive both in lines and colors. It is built on a wheelbase of 134 inches, and its rear seat is wider than formerly. These facts indicate its roomy freedom, which can only be fully appreciated by riding in the car. The upholstery is genuine leather of the finest grade with plain trim. Louvres in the cowl are an added distinctive touch. Powered by a V-type, eight-cylinder engine it embodies, like all the La Salles, important basic features such as a harmonized steering system, Syncro-Mesh transmission, safety-mechanical four-wheel brakes, and Security-Plate glass.





Aluminum for crankcases, carburetors, and other parts is melted in these oil-fired furnaces, which are maintained at the proper temperature

The compensating weights of the LaSalle crankshaft act as an air pump and build up air pressure in the crankcase. This pressure forces the oil vapors directly into the valve compartments and lubricates the valve stems, the valve springs, and the valve guides.

7 MORE BODY ROOM. Because the LaSalle engine is short, it requires only a small section of the car's length. Compared to a car of equal wheelbase, but powered with another type of engine, the LaSalle has many inches more room in the driving and passenger compartments. This is one of the basic reasons for LaSalle comfort and luxury.

MECHANICAL FEATURES

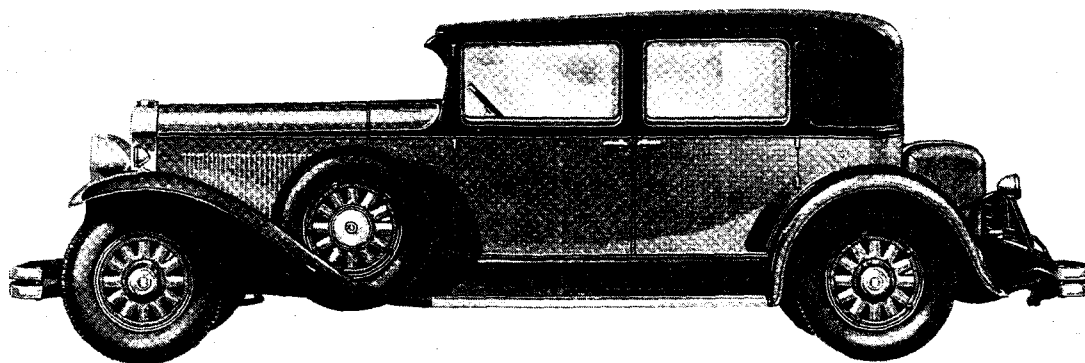
Light, strong crankcase . . The LaSalle crankcase is notable because it combines strength and rigidity with light weight. It is made of a specially treated, silicon-aluminum alloy. In proportion to its weight, this material is twice as strong as cast iron. The crankcase is so designed as to be non-resonant. Coupled with the extreme strength and rigidity which prevent rumbles and vibrations, this results in an agreeable absence of noise.

Short crankshaft . . Three outstanding factors contribute to the efficiency of the LaSalle crankshaft. It is short—shorter than in any other engine of equal displacement. Its diameter of $2\frac{3}{8}$ inches is unusually large. It is forged from carbon steel and is very tough and strong. The short length and the large diameter prevent whip and distortion. They also make possible a perfect balance so that the crankshaft rotates smoothly at all speeds.

Compensating weights attached to the crankshaft further assure smooth, evenly balanced performance. Every LaSalle crankshaft is tested on a special balancing machine developed by the General Motors Research Laboratories. This makes certain that no vibration will mar the smooth performance of the engine.



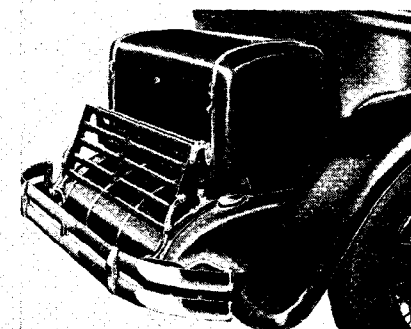
Pouring aluminum. The white-hot silvery metal is poured into sand moulds to form LaSalle parts

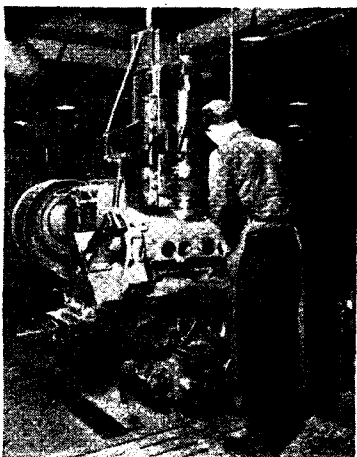


Bumpers of special design add a pleasing touch to the rear view and blend well with the trunk, the valance which covers the gas tank and chassis parts, and the tank filler. From whatever position the new La Salle is viewed, the effect is pleasing

The LA SALLE Five-Passenger Town Sedan

Amid the teeming traffic of the busy city this La Salle easily retains its individuality. Its beauty is remarked by eyes that pay little heed to other passing cars. It is provided with an all-metal trunk, specially designed to blend with the distinctive lines and rich coloring of the car. The charm is enhanced by chromium-plated bars. As a town car this model makes full use of the potentialities in the Syncro-Mesh transmission and safety-mechanical four-wheel brakes. It flashes ahead to take advantage of every traffic opening and stops easily and surely when need arises. Security-Plate glass in the windshield and all doors and windows adds still further to the passengers' safety.





The crankcase surfaces upon which the cylinder blocks are fastened must be absolutely true. This giant milling machine squares the surfaces to form a perfect seat for the cylinder blocks

Strong, light pistons . . Pistons are subject to the terrific impact of the explosions in the cylinders, therefore, they must be strong. La Salle meets this requirement by making its pistons of nickel cast iron, which provides maximum strength with minimum weight.

The cylinder blocks, also, are made of nickel iron. When the engine warms up, the pistons and the blocks expand at the same rate so that a close fit is always maintained. Further provision for smooth performance, in spite of the expansion that naturally occurs in all engines when heated, is made in the design of the wrist pin, which connects the piston to the connecting rod. One end of the pin is fastened to the piston wall by a set screw. The other end is free to expand or contract. This avoids distorting the piston.

Four piston rings are used on each piston, three above the wrist pin, and one below. The lower one is slotted and permits oil to drain back into the crankcase.

Connecting rods . . La Salle connecting rods receive a thrust of approximately one and one-half tons from each explosion in the cylinders. To withstand this terrific thrust, they are drop-forged

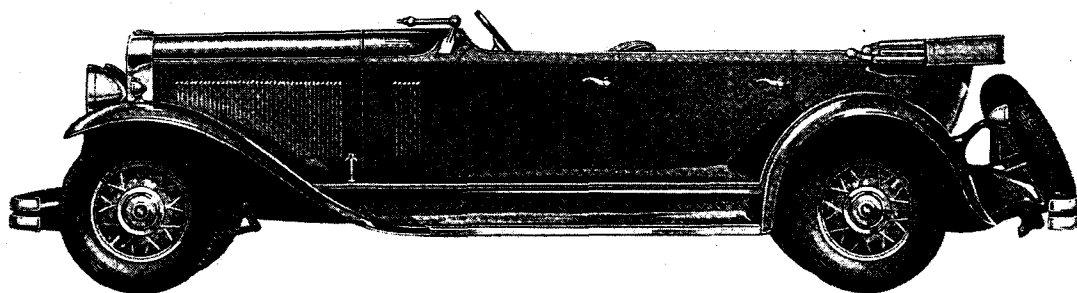
from a special formula steel and are so shaped as to afford the greatest possible strength in proportion to their weight.

To insure quiet operation and long life, the wrist pin bearing and the crankshaft bearing on the ends of the connecting rods must be fitted with extreme accuracy. La Salle achieves this by using a diamond point for boring. The rods are rifle-bored to provide forced lubrication for the wrist pin.

Honed cylinder walls . . There are two cylinder blocks of four cylinders in the La Salle, set at an angle to each other. The cylinders of each block are not exactly opposite each other, but are staggered. This is done so that the connecting rods may be set side by side on the same throw of the crankshaft. The inlet and the exhaust valves are on the same side of the combustion chamber.



This giant multiple spindle drill drills all the holes in the under side of the crankcase in one operation, insuring their correct location and perfect alignment of rotating parts



The mechanism for folding the top is a new type incorporating wood bows and metal mechanism. This top folds compactly, giving a very trim appearance. When raised, the top is held rigidly to prevent noise. The top is completely lined, giving a tailored effect

The LA SALLE-FLEETSHIRE, Five-Passenger Phaeton by Fleetwood

The very spirit of outdoors has been captured by this La Salle with its beautiful custom body by Fleetwood. It is easy to picture yourself using it for a dash to the lake or seaside, or for an invigorating spin to the golf club. The wheelbase is 134 inches, and the rear seat is unusually wide with a resulting roominess that adds greatly to the pleasure of driving. The upholstery is a high-grade, durable leather, set off by fittings of special design. The windshield has been designed to afford a broad vision. Folding very compactly, the top accentuates the smart lines of the car.





All bronze bushings and brass parts are cast in Cadillac-La Salle foundries. The metal is melted in electric furnaces, then is poured into ladles from which it is repoured into sand moulds

The cylinder blocks are made from nickel cast iron which assures long life. By honing the walls of the cylinders, a glass-like surface can be obtained. Because of this, La Salle owners enjoy maximum performance from the moment the car is delivered to them. While nickel cast iron is more costly than the gray iron generally used for cylinder blocks, the expense is justified by the superior performance that results.

Simple valve mechanism . . Extreme simplicity marks the valve mechanism of the La Salle. A single short camshaft operates the valve lifters directly, with no intervening parts. The camshaft is a drop forging, supported on four bearings. It has sixteen integral cams, each operating one of the sixteen valves. It is drilled throughout its entire length. This not only provides a passage for oil, which is supplied to each bearing under pressure, but also further reduces weight.

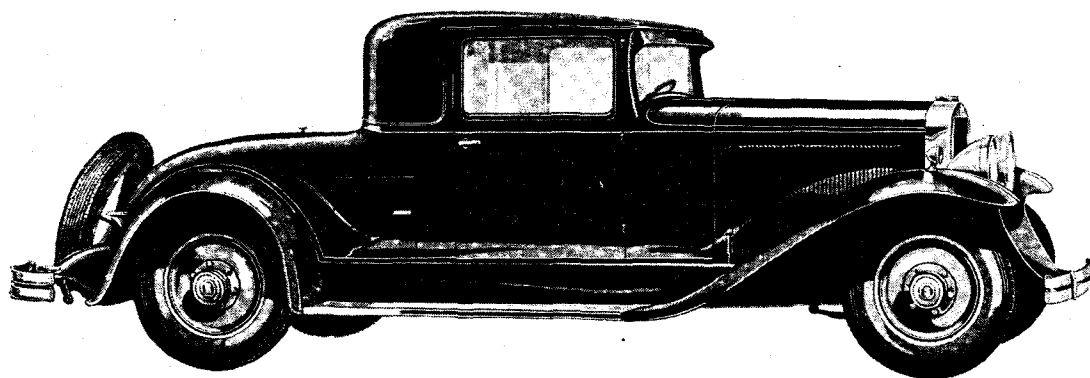
A cam slide with a hardened steel roller that rides upon the cam actuates each valve. It operates in bushings that are machined and aligned to limits that vary by not more than .0005 of an inch. Adjustment of the cam slides is simplified by the fact that they are maintained in a fixed position. Only a screw driver and a single wrench are needed.

The inlet valves are forged from high quality tungsten steel. They have a diameter of $1\frac{5}{8}$ inches. The seats are at an angle of 30 degrees to give free passage to the incoming fuel mixture. Exhaust valves are silico-chrome with a clear diameter of $1\frac{9}{16}$ inches. The seats have a 45-degree angle to compensate for the difference in expansion between the cylinder blocks and the valve stem. Valve lift is $\frac{23}{64}$ inch.

Volumetric efficiency is greatly improved by the design of the combustion chamber, which eliminates all masking of the valves. The camshaft water pump and generator are driven by chains which are more flexible than gears and absorb minor vibrations caused by the valve springs. The chains are also quieter than gears.



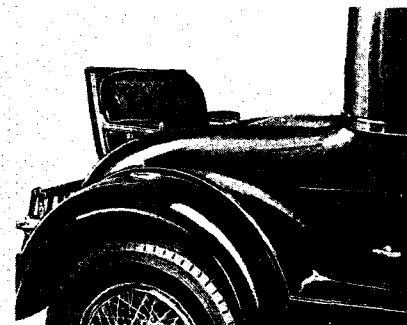
Exhaust manifolds must resist high temperature and great care has been taken to provide a finish which will not crack and rust in use. Manifolds are sand blasted to remove all dirt before being dipped in the porcelain enamel



The wide rumble seat is unusually comfortable, having both an arm rest and a foot rail. Steps are provided on the right side of the fender and bumper. There is a special luggage compartment which may be used for carrying golf clubs and other articles

The LA SALLE Two-Passenger Coupe

Although this is called a Two-Passenger Coupe it can accommodate five passengers. The front seat is amply wide for three and two more can be carried in the rumble seat. There is a luggage compartment, too, which makes the car an excellent one for business use. As in the other La Salles, the instrument board is deeply inset. This not only gives more space but conceals the equipment back of the dash. Another advantage is better ventilation, as air is directed inward by the shape of the board. A cadet visor adds to the car's attractiveness, and its wealth of features is indicated by such equipment as a dome light and smoking set.





The cylinders are poured from this giant ladle moving about the foundry on an overhead track. This insures that the white-hot nickel iron will reach the moulds soon after it leaves the cupola so that its temperature may be high, insuring satisfactory castings

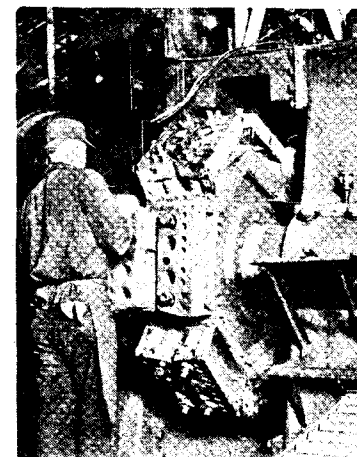
maintained. This is a unique Cadillac-La Salle feature, protected by basic patents. The fuel supply in the LaSalle is strained both before and after leaving the vacuum tank. The second strainer eliminates all water as well as solid particles. It is easily opened for cleaning.

The carburetor . . . The La Salle carburetor is not an accessory but an integral part of the power plant, specially designed by Cadillac-La Salle engineers. It is of the air valve, single jet type and has a number of exclusive features. The fuel level is maintained by a concentric cork float hinged at one side of the bowl and encircling the spray nozzle. This design has a marked advantage in that changes in the fuel level brought about through change of car position when ascending and descending grades are greatly minimized. This assures a more uniform mixture and renders the carburetor less subject to the motion of the vehicle. Three thermostats make seasonal adjustment unnecessary and assure a correct fuel mixture at all times. A richer mixture for accelerating is provided by a throttle pump at one side of the carburetor. It is a simple plunger pump operated di-

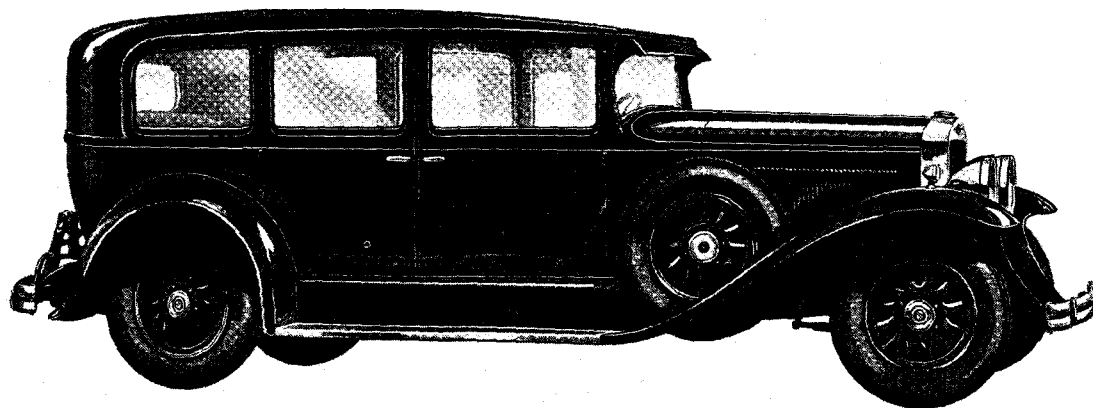
Quiet exhaust system . . . Two manifolds finished in a porcelain enamel, that retains its good appearance despite high heat, lead the exhaust gases from the cylinder blocks into a common manifold and muffler. The gases are expelled through a tail pipe at the extreme left rear of the car where they are least likely to annoy passengers entering the car. The system is unusually quiet.

Positive fuel supply . . . Gasoline is carried in a 23-gallon tank at the rear of the frame. The filler has a vent pipe which permits the escape of air and prevents splashing when the tank is being filled.

The La Salle fuel feed is positive under all conditions. A special vacuum pump mounted at the rear of the crankcase assists the intake manifold. Even on long hills, or when running at top speed for great distances, the fuel supply is evenly



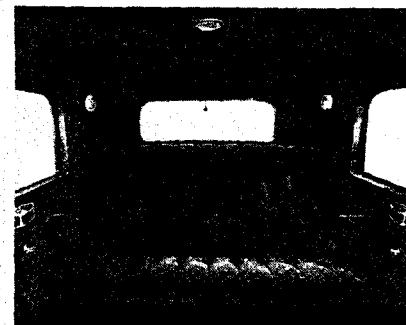
Cylinder blocks mounted on this giant drum pass between milling cutters which square the surfaces to which manifolds are bolted



The inviting luxury of the La Salle is indicated by this picture of the rear compartment. The wide, deep seat is covered with the best grade of upholstery and has comfortable arm rests. The dome light, corner lights, and other fittings are not only features of convenience and comfort, but also add a distinctive contrasting note to the appearance

The LA SALLE Seven-Passenger Imperial Sedan

A partition of Security-Plate glass separates the driving compartment from the tonneau when this La Salle is used as a chauffeur-driven car. The partition can be quickly and easily lowered and concealed, transforming the car into a roomy Seven-Passenger Sedan. As in all the LaSalle's the fenders are lower, the hood louvres are extended forward, and there is a new type hood hinge with concealed mechanism. The gas tank and other parts at the rear of the chassis are covered by a valance with four chromium bands. The steering wheel is the comfortable narrow-rim type with steel spokes finished in black Duco, used in all the La Salle's.





LaSalle cylinders are finished by a honing process giving a smooth, glass-like finish to this important unit

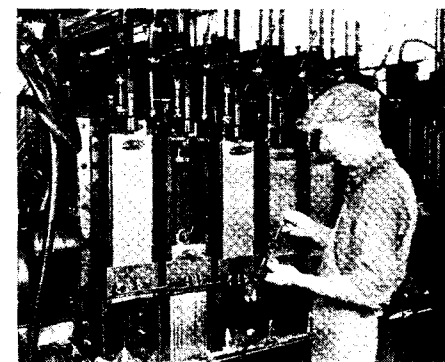
rectly from the throttle shaft furnishing extra fuel in the spray nozzle when the accelerator is depressed rapidly. This pump is controlled by one of the three thermostats. An automatic throttle is provided to prevent fluttering of the auxiliary air valve.

Exhaust-heated intake header . . The carburetor is located between the cylinder blocks connected to the two short intake manifolds by an exhaust-heated intake header. The intake header is provided with passages connecting with each of the two exhaust manifolds. An automatically operated butterfly valve is located at the forward end of the left exhaust manifold to control the temperature in the header. When this valve is closed, the exhaust gases from the left cylinders must pass through the intake header jacket to the right exhaust manifold, thus giving the maximum amount of heat for complete carburetion.

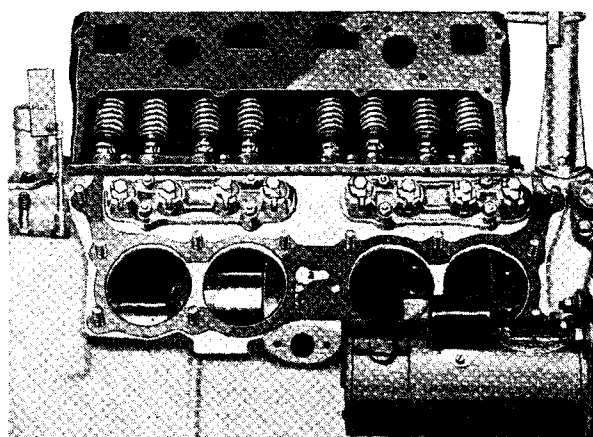
When the engine is operating this valve may be partially open, and the amount of heat is then just enough to maintain carburetion without power loss from overheating. This valve has only one moving part which is operated by gravity and the pressure in the exhaust system. The intake manifolds are of the high turbulence type, insuring perfect distribution under all conditions.

An efficient electrical system . . Cadillac introduced the first self-starter, and the leadership thus demonstrated is amply maintained in the Delco-Remy electrical system of the new La Salle. Current is provided by a 6-volt Exide storage battery with 100 ampere-hour capacity. It is charged by a generator mounted directly back of the water pump on the right side of the engine, and driven from the crankshaft by a silent chain. A switch, controlled by a thermostat, permits high charging rates in cold weather and on short trips, where frequent use of the starter is a drain on the battery. On long trips in warm weather the charging rate is reduced so that there is no need of burning headlamps in the daytime.

The starting motor drives the flywheel through a double reduction gearing, with an overall reduction of 25 to 1, allowing the motor to operate at its most efficient speed and

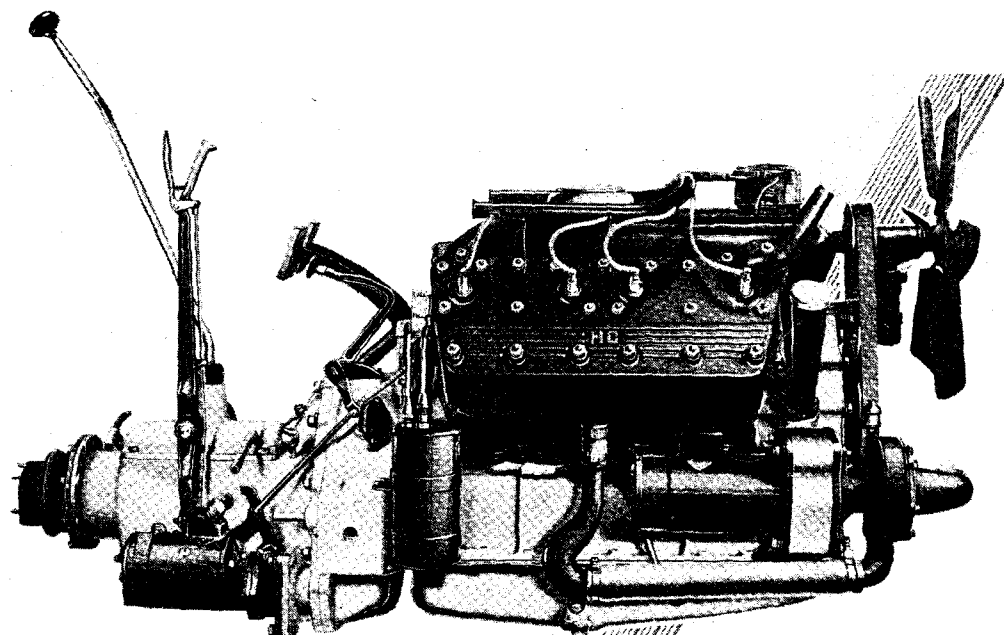
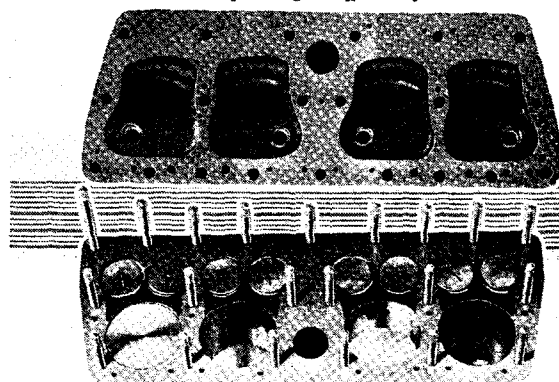


Connecting rods are rifle-bored on this machine to provide lubrication for piston pins



Because of the simplicity of La Salle design only a screw driver and a single wrench are necessary for adjusting the valves

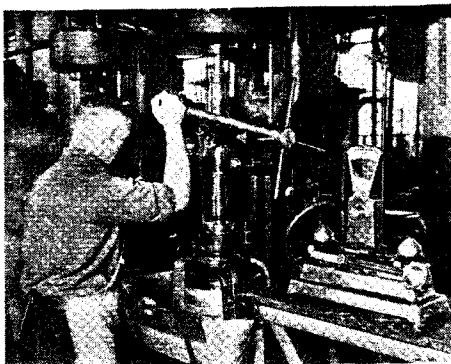
The combustion chamber of the La Salle is designed to eliminate all masking of the valves, thus greatly improving its efficiency



With an actual power output of more than 90 horsepower, the V-type, eight-cylinder engine of the new La Salle offers still higher efficiency than in the past. It is improved both in appearance and accessibility. It makes the La Salle a brilliantly outstanding performer in the fine car field



La Salle connecting rods are drop-forged from a special formula steel. The bearings in both ends are diamond-bored to insure a perfect fit and long life with quiet operation. The rods are rifle-drilled to provide forced lubrication for the piston pins



Smooth performance and perfect balance of the LaSalle engine are secured by accurately weighing each end of the connecting rod and then machining to bring the weight within specified limits

thus greatly reducing the demand on the battery. Starting gears are always in mesh before power is applied. They are thus relieved of sudden strain and are assured of long life and quiet operation. The entire electrical system is the single wire type, completing the circuit through the frame and having accessible terminal blocks on the dash. A lockout circuit breaker and a vibrating breaker give warning of short circuits. If these occur in the headlamps or other readily accessible units the vibrating breaker sets up a noticeable vibrating noise, which continues until the trouble is corrected. This would be undesirable if the short circuit occurred in some units, such as the horn. So for these the lockout breaker opens and remains open until the cause is removed. The breakers eliminate the need of fuses. Current automatically returns when the short circuit is corrected. No La Salle owner, therefore, will ever be delayed for lack of fuses. The two large headlamps have double-filament bulbs. The beams from one are cast straight ahead for open road driving. Those from the other are

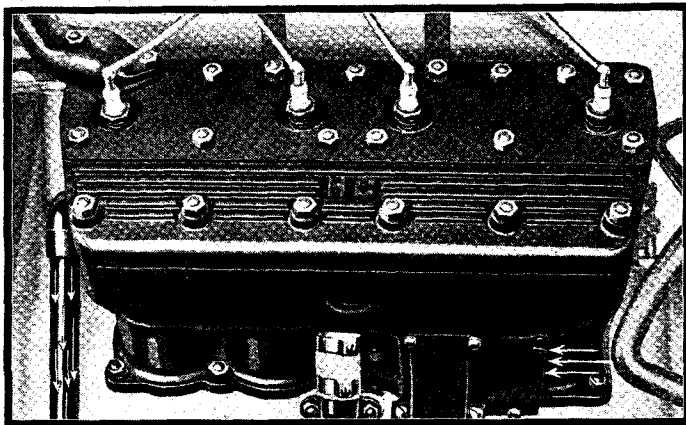
depressed so that they do not annoy approaching drivers. The lenses are fluted to deflect and spread out the rays so that ample light is given without glare. They are controlled by a single, convenient lever in the center of the steering wheel. Other electrical equipment includes instrument board lamps, parking lamps on the front fenders, a combination tail- and stop-light on the left rear fender, and a high-frequency, vibrator-type horn attached to the left headlamp support.

Reliable ignition . . A Delco-Remy high-tension system provides reliable ignition for the La Salle. The timer, distributor, and condenser are assembled as a single unit at the front of the crankcase. A conduit protects the wires leading from the distributor to the spark plugs. The induction coil, in which the high tension current is built up, is enclosed with a Bakelite cap and is waterproof. At every point the system is protected against moisture.

Among unusual features of the system are the use of two sets of contact points in the timer instead of one, and automatic control of the spark, so effective that it has been possible

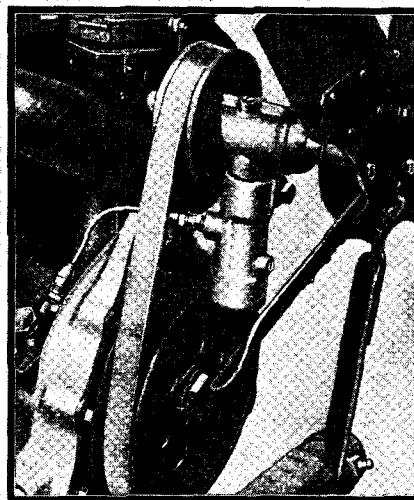
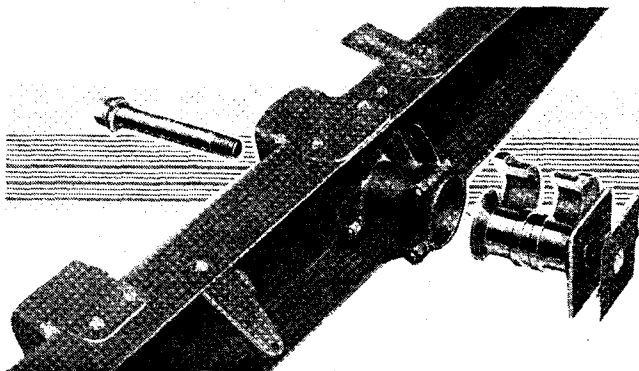


Pistons are gauged for eccentricity on this sensitive machine and then assorted into groups varying from each other by only a thousandth of an inch, so that they may be matched with cylinders of like dimensions



A simple system of crankcase ventilation on the La Salle prevents the dilution of the oil by vapor and gasoline, so that oil changes are needed only after 2000 miles of operation. The crankshaft and its compensators act as an air pump and build up a pressure in the crankcase. This pressure holds the vapors that pass the piston rings on the down stroke of the piston. On the return stroke they are forced through a port in the cylinder wall into the valve compartment when they lubricate the valve mechanism, and then drain away

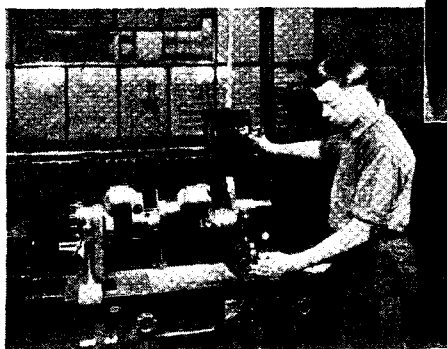
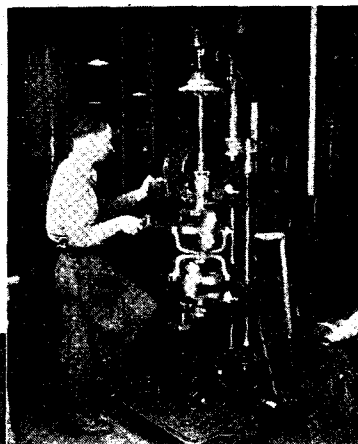
Specially designed rubber mountings support the La Salle engine at the rear of the crankcase. They completely insulate the engine so that noise is not transmitted to the interior of the car



The La Salle carburetor is not an accessory, but an integral part of the power plant designed by La Salle engineers for the La Salle. Three thermostats make seasonal adjustment unnecessary

The fan of the new La Salle is automatically lubricated. A lead runs from the oil pressure regulator to the Durex bushings and assures quiet, dependable operation at all speeds

LaSalle's compensated crankshaft is balanced on these special machines to completely eliminate all vibration, thus providing exceptionally smooth performance. This adds still more perfect performance to the many advantages resulting from the design of this crankshaft



to remove the spark control lever from the steering column to the instrument panel.

The firing order of the cylinders in the La Salle is as follows:

Front 8 7 5 2
1 4 6 3

A coincidental lock on the instrument panel simultaneously opens the ignition circuit and locks the transmission. The transmission may also be locked in reverse position to afford added safety when the car is parked on steep grades.

Effective cooling . . The compactness of the La Salle engine makes possible a very simple and effective cooling system. A single centrifugal pump is sufficient to keep the water circulating to the most remote parts of the engine. It is driven by a silent chain from the crankshaft and has a flexible coupling of laminated spring steel. This permits the pump shaft to align itself and reduces wear on the packing.

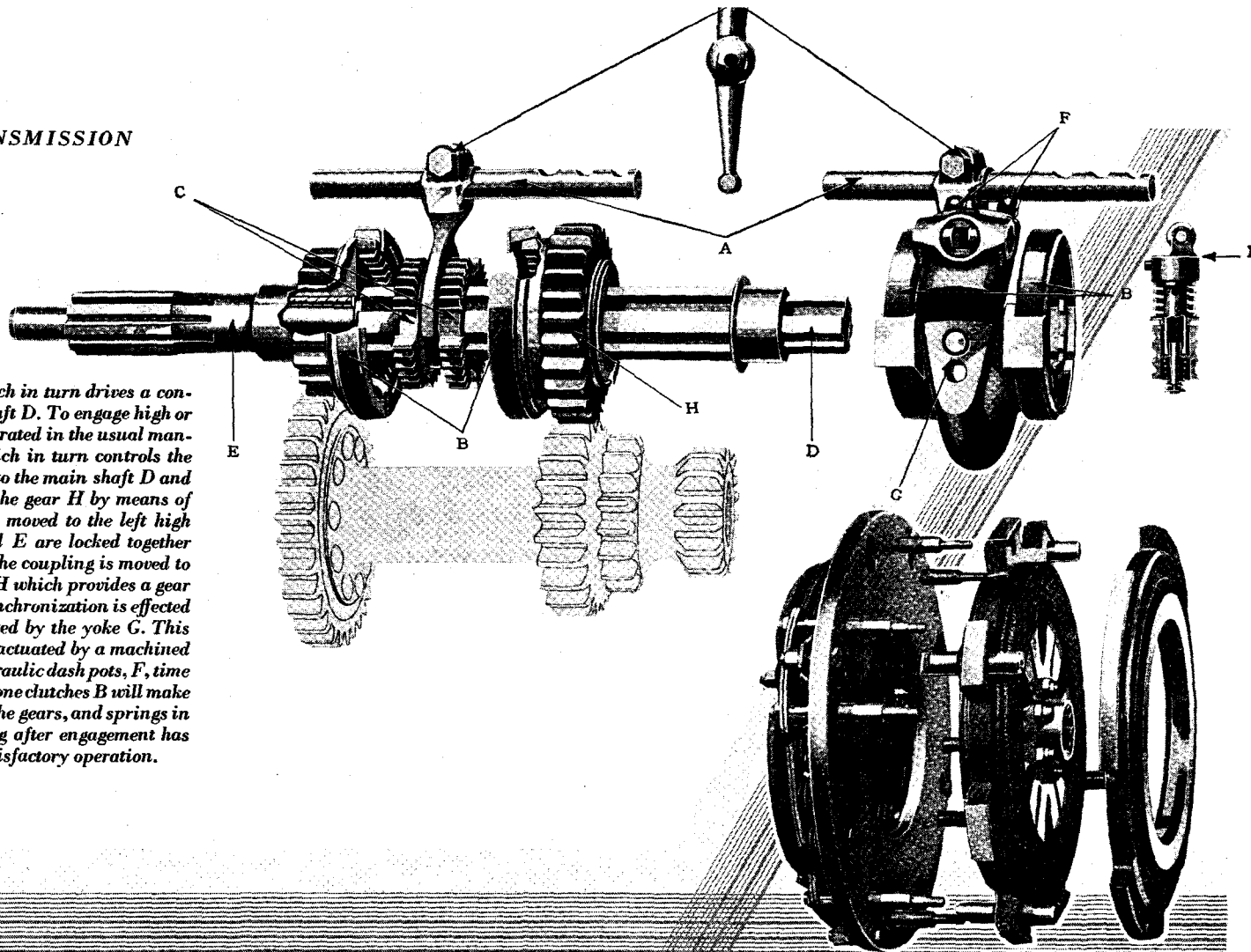
The cellular type radiator, of large area, has vertical, balanced shutters, controlled by a thermostat in the upper radiator tank. The shutters are automatically closed when the engine is cold. When the water in the cooling system reaches a predetermined point they open and admit air through the radiator. Not only the temperature of the water but also the temperature of the air under the hood is thus controlled. This, in conjunction with the thermostatically controlled carburetor, greatly reduces the warming-up period in cold weather. A temperature indicator is mounted on the instrument panel. A six-blade fan, driven by a V-belt from the crankshaft, draws air through the radiator. The fan is mounted in Durex bushings and is automatically lubricated.

Full-pressure lubrication . . A full-pressure system affords complete automatic lubrication for the La Salle engine. An eight-quart, pressed-steel reservoir closes the under side of the crankcase. Its entire area is covered by a fine mesh screen through

THE SYNCRO-MESH TRANSMISSION

Shaft E is connected to the clutch and rotates with it at all times. Shaft D is connected by the propeller shaft to the rear wheels. To transmit power these shafts must be locked together either directly or through a gear train. Shaft E provides a bearing for the main shaft D which is free to rotate within it.

Shaft E also drives a countershaft which in turn drives a constant mesh gear H, free to rotate on shaft D. To engage high or second speeds the gear-shift lever is operated in the usual manner. It moves the shifting fork A which in turn controls the coupling C. This coupling is splined to the main shaft D and engages either the gear on shaft E or the gear H by means of internal teeth. When this coupling is moved to the left high speed is obtained, since shafts D and E are locked together without any intervening gears. When the coupling is moved to the right, shaft D is locked to the gear H which provides a gear reduction through the countershaft. Synchronization is effected by cone clutches B which are supported by the yoke G. This yoke surrounds the coupling C and is actuated by a machined surface on the shifting fork A. Two hydraulic dash pots, F, time the synchronization period so that the cone clutches B will make contact before coupling C meshes into the gears, and springs in the yoke G insure the cones separating after engagement has been effected to insure long life and satisfactory operation.



The La Salle clutch provides positive engagement with extremely light pedal pressures. This clutch is of a two-plate design and provision has been made for a positive release of the driven plates when the clutch is disengaged



The carburetor is built entirely in the Cadillac-La Salle plant and assembled by hand so that these small parts may be accurately fitted for perfect carburetion

which all the oil draining back from the engine must pass before going through the system again. Further protection is afforded by an external oil filter through which the oil passes under pressure, and is freed of grit.

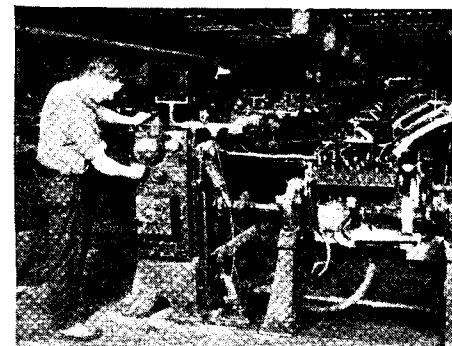
Pressure is provided by a single pump driven from an extension of the distributor shaft. This forces oil to the passages in the crankshaft and camshaft from which it is distributed to the bearings. Cylinder walls and pistons are lubricated by oil thrown from the connecting rod bearings. Pressure is controlled by a piston valve regulator and the overflow from this lubricates the chain mechanism. Pressure built up in the crankcase by the compensating weights of the crankshaft forces a fine mist of oil vapor through ports in the cylinder walls and lubricates the valve springs, stems, and guides.

Oil pressure is shown by a gauge on the instrument panel and oil level by a gauge on top of the crankcase at the rear of the right cylinder block where it can easily be seen.

The thorough lubrication of the La Salle engine is an important factor of value as it assures both continuous smooth operation and long life with minimum attention from the owner.

Crankcase ventilation . . Oil changes are necessary only after each 2000 miles of operation in the La Salle, contrasted to 500-mile intervals that at one time prevailed. This is due to a crankcase ventilation system, developed by Cadillac, which keeps the crankcase oil from being diluted by water and unburned fuel vapors. The crankshaft and its compensators act as an air pump drawing preheated air through a port in the left side of the crankcase. A pressure is built up which forces the crankcase vapors through a port in each cylinder wall, as described in the lubrication section. After lubricating the valve mechanism, the vapors condense and are drained out of the car.

Three-point suspension . . Three-point engine suspension in the La Salle mini-



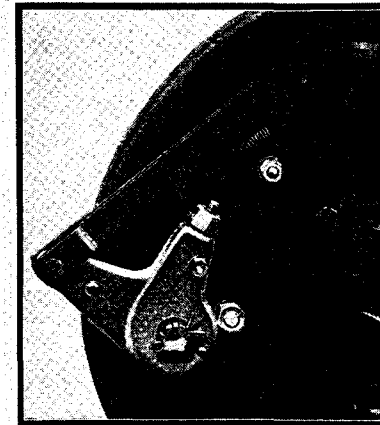
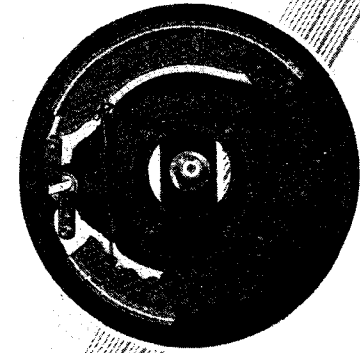
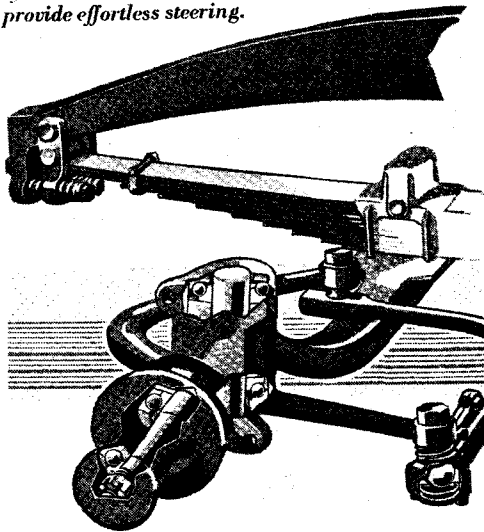
Each completed La Salle power plant is tested in this dynamometer room by skilled operators for fine performance. Before leaving this room, the engine is partially disassembled, inspected, and readjusted

SAFETY-MECHANICAL FOUR-WHEEL BRAKES

The safety-mechanical brakes, introduced by La Salle in 1928, are based on sound engineering and careful application of the basic laws and principles of mechanics to the problem of decelerating a rapidly moving automobile. When one considers the power necessary to accelerate a car to 60 miles per hour, it is apparent that an equal power must be dissipated in the brakes to produce the rapid deceleration necessary in our present congested traffic. The energy thus dissipated is turned into heat, where it normally tends to produce severe distortion of the brake parts which would tend to mar the performance of any brakes which are not designed on correct engineering principles. The exclusive feature of the La Salle safety-mechanical four-wheel brakes is the articulated link which will always align itself with the resultant of all the forces acting upon the brake shoe at any given time. The force exerted by the cam combines with the resultant of all the frictional forces, producing a force which is always parallel to this link. This eliminates completely "toe" or "heel" contact, making all braking area effective and giving a remarkable degree of self-energization. This link also permits a change in the position of all brake parts to counteract the expansion which accompanies the necessarily high temperatures attained in braking. This realignment of the brake parts with temperature assures the same uniform braking action under every driving condition.

LASALLE HARMONIZED STEERING SYSTEM

The La Salle harmonized steering system introduces a new conception of safety and ease of control to motoring. A steering modulator at the forward end of the left front spring and the generous use of ball bearings throughout the system eliminate shimmy and provide effortless steering.



Adjustment, when required, is made through a single accessible nut on each wheel



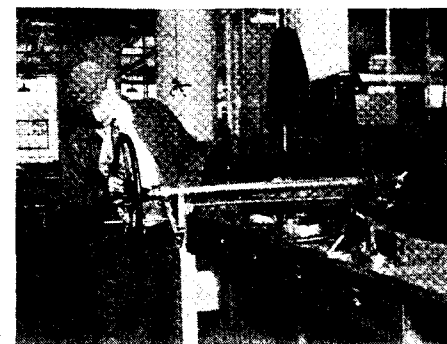
The perfect balance of the La Salle power plant is preserved by carefully balancing each part rotating with the flywheel. The clutch assembly is tested for balance on this machine and the proper corrections are made

mizes strains and prevents distortion of bearings and other parts. The forward mounting is a ball-and-socket joint. The two rear mountings are lined with durable rubber.

Easily operated clutch . . To preserve the perfect balance of the engine, the LaSalle dry-plate clutch is also carefully balanced. It consists of two 10-inch driven discs faced on both sides with compressed fabric. Springs, levers, and other parts are attached to the flywheel. The clutch throwout bearing moves on a sleeve mounted on the transmission. This construction causes the clutch to cease spinning promptly when disengaged and promotes easy gear shifting. It is sturdy and seldom needs adjustment.

Syncro-Mesh transmission . . With this transmission even a novice can shift gears as noiselessly as an expert. The need for pausing in neutral while shifting gears is eliminated,

making possible the rapid get-away so essential in modern traffic. Another advantage is revealed in descending steep hills. Without slowing down, and without damage to the gear set, it is possible to shift from high into second gear. The principle of this transmission is simple and positive. It provides three speeds forward and one reverse as in conventional practice. It differs, however, in that the gears except low and reverse are in constant mesh. A coupling, fitted with conical friction cones, is provided to connect the drive shaft with either the second-speed or high-speed gears by means of internal teeth. In shifting, the conical member engages a corresponding member on the second or high-speed gear before the teeth on the gear and the coupling meet, causing the rotating parts to travel at the same speed, enabling complete engagement to be effected readily. The motion of the coupling and its cones is controlled by a special cam and two hydraulic controls to provide perfect tooth engagement at all times. The positions of the control lever in the various gear combinations remain unchanged and the method of operation is as heretofore.

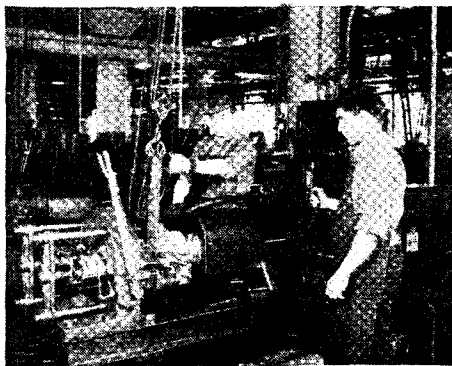


La Salle steering gear assemblies are inspected for proper operation and ease of control by these sensitive gauges before being installed in a car, thus assuring complete satisfaction for the owner

The gears and shafts of the transmission are casehardened, alloy steel. The faces of the gears are cut on a gear shaper and accurately ground. They have been widened, distributing pressure over a larger area and reducing wear and consequent noise.

Enclosed propeller shaft . . The La Salle propeller shaft is tubular—the strongest design in proportion to weight. It is fully enclosed by a torque tube which absorbs all driving and braking forces. The springs thus relieved of these strains are designed solely for maximum riding comfort. The drive shaft is connected to the transmission shaft by a universal joint, which is automatically lubricated from the transmission.

Floating-type rear axle . . The rear axle is the three-quarter floating type with a 59½-inch tread and shafts and gears of special alloy steel. The advantages of this type are: permanently quiet connection between the axle shaft and the wheel without bending stresses in the shaft, and the relieving of the shafts from carrying the weight of the car. Large, adjustable, tapered roller bearings form the mounting for the ring gear, which meshes with a pinion mounted in ball bearings, with a double row bearing to carry thrust loads. To secure perfect tooth contact the gears are individually matched and are tested in silent rooms for quiet operation.



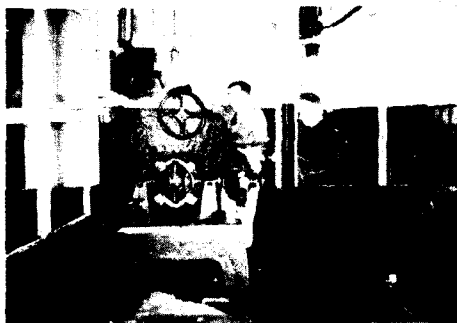
Each Synchro-Mesh transmission is tested on this machine, where gears are shifted from high into second at high speeds to assure complete synchronization



Oil pans, splash pans, and other sheet metal parts are stamped by giant presses to their correct form

Front axle . . The front axle is the reverse Elliott type with a tread of 57¼ inches. The steering spindles are mounted on adjustable ball bearings and their position, as well as that of the axle, is designed to provide easier steering at all speeds with maximum safety. The parallel rod is mounted to the rear of the axle with self-adjusting ball-and-socket joints at each end.

Safety-mechanical four-wheel brakes . . In most cars fully 50 per cent of the



Rear axle assemblies are tested under load in silent rooms where outside noise is completely eliminated, permitting gear noise to be readily detected. Tooth contact is examined and a complete record made of each assembly before it is released to enter a car

foot pressure applied to the brake pedal is lost through friction before reaching the brakes. The La Salle braking system minimizes this loss to a hitherto unprecedented degree by the use of fifteen roller bearings. No other manufacturers employ this construction. Combined with the scientific design of the brakes it makes the brakes astonishingly easy to operate, a point much appreciated by women. La Salle's safety-mechanical four-wheel brakes are the internal shoe type, simple and rugged in construction. The service brake pedal applies braking pressure to 15-inch drums simultaneously on all four wheels in proper ratio to insure maximum effect in all weather and on all kinds of road surfaces. The hand brake, for parking or emergency use, operates on the rear wheels.

Each brake consists of a pair of articulated shoes cast from aluminum alloy, insuring remarkable rigidity. The shoes are operated by a floating cam which permits them to center themselves to compensate for unequal wear, a feature not found in other cam-operated shoe brakes. The articulated shoe construction eliminates "toe" or "heel" contact; therefore, the wrapping motion, either forward or reverse, is so uniformly distributed that seizing is impossible. Furthermore, *the whole braking area is effective at all times*. Consequently, the brakes will not overheat with a change of pedal position when descending long grades. Each drum is encircled by a coil spring to dissipate heat and muffle noise. Lead tips on the long shoes pick up foreign particles and prevent them from scoring the drums.

The brakes are fully enclosed and protected against mud, water, etc. The rods and cables are designed so that braking action is not affected by the roughest roads. Adjustment, needed rarely, is made by a single easily accessible nut on each wheel.

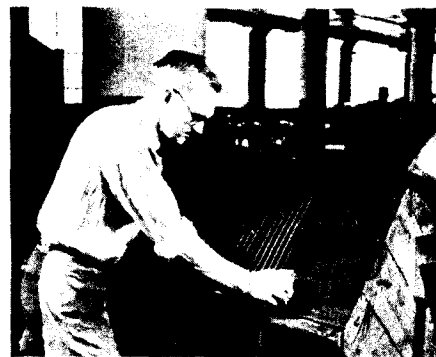
Springs and shock absorbers . . Since driving strains are taken by a torque tube, La Salle springs are designed solely for riding comfort and in careful relation to the weights of the various body types. They are the semi-elliptic type, resulting in a low center of gravity without sacrificing head room. The total spring length on each side of the car is 97 inches, 72 per cent of the wheelbase. The spring leaves are forged from heat-treated silico-manganese steel, and are designed so that the ends do not dig into the other leaves. Rear springs are shackled at both ends. They are covered with gaiters packed with petrolatum to insure perfect lubrication and quietness. Duo-draulic shock absorbers are fitted to each spring.

Harmonized steering system . . To meet modern high-speed driving demands, the La Salle steering system has been harmonized by means of a steering modulator on the left front spring, consisting of a flexible shackle with four coil springs. This completely cancels front wheel shimmy and "tramp." The steering gear is the worm and sector type with a 14 to 1 reduction. Large bronze bushings support the worm and take all radial loads, and adjustable ball bearings take the thrust loads. The sector is machined from a forging of new metal—nitraloy steel—having extreme hardness and resistance to abrasion. The 19-inch steering wheel has throttle and headlight controls in the center, designed so that they cannot tear the driver's clothes in a quick maneuver.

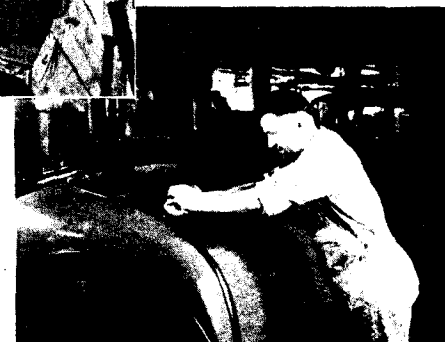
Sturdy frame . . The La Salle frame not only affords safety by its strength but also reduces deflections to a minimum and relieves the engine and body from twisting strains. The sides are $\frac{5}{32}$ -inch channel steel sections with the unusual maximum depth of eight inches at the center where the strain is greatest. They are rigidly tied by six cross-members. Two of these—at the front and at the rear outriggers—are tubular, the strongest type possible in proportion to weight.

The ends of the tubular braces are splined and pressed into brackets, thus overcoming the common engineering difficulty of anchoring tubular braces—an accomplishment that typifies Cadillac-La Salle progress and that is unique and highly advantageous in frame construction.

Wheels . . Four types of wheels are available on the La Salle: wood, demountable wood, wire, and disc. The wood wheels are standard equipment and have split-type, demountable rims. The demountable wood, wire, and disc wheels, which are obtainable at extra charge, have integral rims. The wood wheels have twelve spokes of selected hickory anchored by hydraulic pressure into a steel felloe. The wire wheels are unusually strong and have large ornamental hub caps. The disc wheels have a double curve propor-



The high luster of La Salle bodies and hoods is obtained by hand rubbing. This gives a lasting and perfect finish not obtainable in cars where quality is not the dominant consideration



tioned to insure resiliency and freedom from rumble. The demountable wood wheels have special hubs to permit easy removal. For standard wood wheels 6.50-19 tires are supplied, and for all other types 7.00-18.

Unapproached value . . Many more impressive details could be added to this description of the La Salle, but enough have been given to show the sound, fundamental principles on which the superiority of La Salle is based. Measure the La Salle by whatever standard you choose—appearance, performance, comfort—and the same fact stands out clearly. La Salle value is not approached by any car of anywhere near similar price.

A word to any Cadillac-LaSalle dealer will gladly place one of the new La Salles at your disposal so that you can test the car yourself, and can learn for yourself what a remarkable value it is, and how it can give you a new conception of fine car motoring satisfaction.

CONDENSED SPECIFICATIONS

LA SALLE 340

POWER PLANT

Engine . . Compensated eight-cylinder, V-type. Ninety-degree angle between cylinder blocks. Engine and transmission in unit; three-point suspension with rubber-lined supports at rear. Piston displacement 340 cubic inches. Bore $3\frac{5}{16}$ ". Stroke $4\frac{1}{8}$ ". Horsepower N.A.C.C. rating 35.1, actually more than 90.

Crankcase . . Silicon-aluminum alloy, specially treated.

Crankshaft . . Diameter $2\frac{3}{8}$ "; length to outer ends of front and rear bearings $23\frac{1}{2}$ ". Supported on 3 main bearings. Crank throws 90 degrees apart, provided with compensators.

Cylinders . . Cast in blocks of four, with detachable heads. High-compression heads standard, low-compression optional.

Pistons . . Cast nickel-iron, special formula, annealed; 4 rings, 3 above wrist pin and 1 below; lower ring special oil regulating type.

Connecting Rods . . Drop-forged special formula steel. Side by side, two on each crank pin. Rods are gun-drilled for pressure lubrication of wrist pins. Bearings $2\frac{3}{8}$ " x $1\frac{3}{8}$ ". Babbitt in rods at lower ends.

Camshaft . . Single, hollow shaft with 16 cams, supported on 4 bearings. Driven from crankshaft by silent chain.

Valves . . Intake $1\frac{5}{8}$ " clear, tungsten steel; exhaust $1\frac{5}{16}$ " silico-chrome steel, $\frac{23}{64}$ " lift. Mechanism enclosed. Valve stems automatically lubricated. Valves are unmasked.

GASOLINE SYSTEM

Carburetor . . Cadillac design and manufacture. Uniform distribution, with maximum efficiency and economy. Automatic thermostatic mixture control. Large accessible strainer. Overflow from carburetor drained to ground. Intake header exhaust-heated. Valve in left exhaust manifold automatically operated, when closed deflects exhaust gases back from left cylinders through intake header jacket to the

right exhaust manifold, thus giving maximum heat for carburetor almost immediately after starting.

Supply . . Twenty-three gallon tank. Vacuum feed. Vacuum from intake manifold assisted by vacuum created by a special vacuum pump to insure positive feed under all conditions.

COOLING SYSTEM

Water Cooling . . Capacity 6 gallons. Forced circulation by one pump driven by a silent chain from the crankshaft. Cylinder blocks interconnected by a copper tube cast in crankcase. One drain plug for entire system.

Temperature Control . . Thermostatically controlled by radiator shutters with vertical balanced shutter blades.

Radiator . . Copper with cellular core. Casing chromium-plated on polished nickel.

Fan . . Diameter 21"; 6 blades; belt driven by pulley mounted on end of camshaft. Fan bearing automatically lubricated from main supply of engine.

LUBRICATING SYSTEM

Engine Lubrication . . Pressure system with gear pump conveys oil under pressure to all main bearings, connecting rod bearings, wrist pins, camshaft bearings, and fan. Pressure is controlled by an automatic pressure regulator. Oil level indicator is located on right-hand side of crankcase at rear.

Crankcase Ventilation . . An exclusive Cadillac system which prevents dilution of lubricating oil from unburned gasoline and from condensation of water vapors produced in combustion.

Oil Filter . . An effective filtering device which removes from the oil any impurities in solid form.

ELECTRICAL SYSTEM

Ignition . . La Salle-Delco high-tension system with 2 timer contact arms actuated by 4-lobed cam. Jump-spark distributor.

Ignition Lock . . Coincidental theft-proof ignition and transmission lock operated from instrument board.

Generator . . Two-pole La Salle-Delco type, mounted on right side of engine. Positive drive by chain from crankshaft. Thermostatic and third brush control of charging current.

Starting Motor . . La Salle-Delco separate 4-pole unit; double reduction between motor and flywheel. Mounted along right side of transmission.

Battery . . Exide, 100-ampere hour, 6-volt, 3-cell.

Horn . . High-frequency vibrator horn of exceptional tone, carried on left headlamp bracket at side of radiator. Concealed connections.

Lighting Equipment . . Two headlamps with tiltable light beams controlled from steering wheel, fluted lenses, 21 c.p. double-filament bulbs and parking lamps with 3 c.p. bulbs. Parking lamps mounted on top of front fenders. Combination stop and tail light located on left rear fender.

OPERATING CONTROLS

Clutch . . Dry disc plate type. Two steel driven discs 10" in diameter, faced both sides with compressed asbestos fabric, driven by cast iron plates to which are attached all springs, levers, and other parts of clutch, with exception of clutch thrust bearing, which is supported by a sleeve bolted to the transmission case.

Transmission . . Special Cadillac-La Salle Syncro-Mesh transmission, giving noiseless, smooth gear shifting at all speeds. Selective type with three speeds forward and one reverse. Nickel-steel gears and shafts. Faces of gear teeth ground on special grinding machine to obtain silent operation. Mechanism contained in cast iron case.

Gear Shift . . Center gear shift.

Service Brakes . . Safety-mechanical brakes. Special design. Entirely enclosed, giving maximum efficiency in all weather. Mechanically operated, internal on both front and rear wheels. Division of pedal pull automatically proportioned between front and rear systems. Front brakes equalized when straight ahead, outer brake released on turn. All brakes are 15" in diameter.

Hand Brakes . . Internal, on rear wheels.

Steering Gear . . Cadillac design, worm and sector, completely adjustable. Reduction 14 to 1. Steering wheel 19" in diameter. Steering system completely harmonized by means of special modulator at the forward end of the left front spring completely eliminating all shimmy, front end tramp, and road shocks.

Engine Controls . . Accelerator at right of brake pedal. Hand throttle built into central portion of steering wheel.

MISCELLANEOUS

Axles . . Rear axle, Cadillac make, $\frac{3}{4}$ floating with special alloy steel axle shafts and gears. Spiral bevel gears mounted on large bearings. Front axle, reverse Elliott type, drop-forged steering spindles and arms; steering spindles have adjustable bearings at both ends. Parallel rod has spring compensated ball-and-socket connections at end.

Drive . . Hollow steel drive shaft 2" diameter turns in torque tube, which completely seals assembly. Rear end of drive shaft rigidly connected to rear axle by splined sleeve; front end to transmission shaft through universal joint. Torque tube is bolted to differential carrier at rear, and front end pivoted in ball-and-socket joint at rear of the transmission. Transmits drive of rear wheels to chassis and absorbs torque reactions due to acceleration and brakes.

Frame . . Side bar channel section with wide top flange, carbon steel, maximum depth 8", width 29" in front, 37 $\frac{1}{2}$ " in rear; flange width at top 3", at bottom 2 $\frac{1}{4}$ ".

Springs . . Semi-elliptic system of suspension with rear springs underslung. All shackles of tension type. Front springs 39" x 2"; rear 58" x 2". Double-acting shock absorbers of hydraulic type, front and rear, with both upward and downward dampening action, give greatly improved riding qualities.

Gear Ratio . . Standard 4.54 to 1. Optional 4.91 to 1 and 4.07 to 1.

Wheels . . Artillery type, 12 hickory spokes with steel felloe. Adjustable ball bearings at front, demountable hot-rolled split-type rim with 6 lugs. Large steel hub with 12 bolts. Disc, wire, or demountable wood wheels obtainable at additional cost.

Wheelbase . . 134". Tread rear 59 $\frac{1}{2}$ "; front 57 $\frac{1}{4}$ ".

Tires . . 6.50-19 on wood wheels; 7.00-18 on all others.

Tools . . . Complete set of tools in special fabric holder.

Instrument Board . . . Instruments arranged in individual assembly. Fitted with windshield wiper control, spark control, oil pressure gauge, button controlling carburetor enriching device, switch for instrument board lighting independent of switch on steering column, speedometer, ammeter, electrically operated gasoline gauge, eight-day clock, coincidental transmission and ignition lock, engine temperature indicator, and cigar lighter.

Fenders . . . One-piece, full crown, wide type.

Security-Plate Glass . . . Is fitted in all models both open and closed, for windshields and body windows.

BODY STYLES

The new La Salle is available in seven Fisher Body types and six Fleetwood Special Custom bodies. The wheelbase for all body types is 134 inches.

The seven Fisher Body styles are:

Two-Passenger Coupe	Five-Passenger Sedan
Two-Passenger Convertible Coupe	Five-Passenger Town Sedan
Five-Passenger Coupe	Seven-Passenger Sedan
Seven-Passenger Imperial Sedan	

FLEETWOOD SPECIAL CUSTOM BODIES

The six Fleetwood Special Custom body styles are:

La Salle-Fleetcliffe	Two-Passenger Roadster
La Salle-Fleetshire	Five-Passenger Phaeton
La Salle-Fleetlands	Seven-Passenger Touring
La Salle-Fleetway	Four-Passenger All-Weather Phaeton
La Salle-Fleetwind	Four-Passenger Sedanette Cabriolet
La Salle-Fleetwind	Four-Passenger Sedanette

The Cadillac Motor Car Company reserves the right to make changes in specifications at any time without incurring any obligation to install same on cars previously sold



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LA SALLE

Operator's Manual



1936

CADILLAC MOTOR CAR COMPANY
DETROIT

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CADILLAC MOTOR CAR COMPANY

EDITION No. 340-1
In ordering a duplicate of this Manual specify the
above number or the engine number of the car

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CHAPTER I

Cadillac Service

THE owner of a La Salle car has purchased not simply a fine piece of machinery, ingeniously designed and carefully built—he has purchased a pleasant and dependable mode of transportation. The car itself is only one factor in securing this transportation—the other factor is Cadillac Service, which is built upon a *standard policy, clearly defined to the car owner and guaranteeing him efficient service everywhere at standard prices under factory regulation.*

Cadillac-La Salle Service Stations

Cadillac Service extends wherever Cadillac and La Salle cars are sold. Service stations conducted by Cadillac distributors and dealers are designated as "Authorized Cadillac-La Salle Service Stations," and are identified by the exclusive sign illustrated on the cover of this manual. Wherever this sign is displayed, the owner will find an organization prepared to service La Salle cars. This means proper equipment, factory-trained personnel, a stock of genuine replacement parts and standardized policies and methods.

The car owner's first and most frequent contact with Cadillac Service will naturally be in the service station of the distributor or dealer who sold him the car, and who therefore has the greatest interest at stake in assuring his satisfaction. Nevertheless, he may feel perfectly free to use his car for extended travel without depriving himself of the service benefits to which he is entitled at his local service station. He will find other Authorized Cadillac-La Salle Service Stations able and willing to render the same service.

Service Card

As a means of introduction at other Authorized Cadillac-La Salle Service Stations, every purchaser of a La Salle car is given credentials in the form of a Service Card. This card is mailed to him by the Cadillac factory, immediately after the delivery of the car is reported by the distributor or dealer. It is supplied in a celluloid

case, and is intended to be carried in a holder provided on the rear face of the dash.

Upon presentation of this Service Card to any Authorized Cadillac-La Salle Service Station, the car owner is entitled to the following uniform standard service:

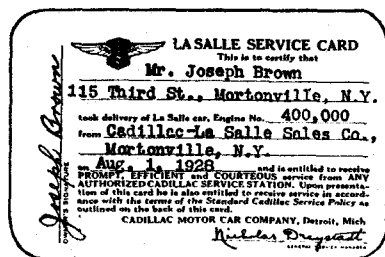


Figure 1. The Service Card, when properly signed, identifies a La Salle owner at any Authorized Cadillac-La Salle service station.

1. All adjustments free of all charges that may be required within 90 days after the original delivery date (as shown on the card), provided the mileage of the car does not exceed 3000, and the adjustments are not made necessary by accident, abuse or neglect. This includes everything except lubrication, washing and storing.

2. Free replacement of any part which has proved to the Cadillac Motor Car Company's

satisfaction to be defective in material or workmanship within one year after the delivery date, provided the mileage of the car does not exceed 12,000 and that the replacement was not made necessary by accident, abuse or neglect. This includes material and labor.

The Service Card is not transferable and the no-charge service set forth above is effective only while the car is in the hands of its original owner.

Service Charges

Service work other than that described above is performed by Authorized Cadillac-La Salle Service Stations on a flat-rate basis. When a car enters the service station, it is promptly inspected by a tester, who then quotes the owner an exact price for the work he finds necessary. The owner authorizes this work at this price and, when he receives his bill, this is the price he pays.

Charges prevailing at Authorized Cadillac-La Salle Service Stations are based on standard schedules furnished by the Cadillac Motor Car Company. These schedules call for methods and tools approved by the same engineers who designed and built the car, assuring the highest quality of work at the lowest possible price consistent with this quality.

Repair Parts

Genuine La Salle parts, manufactured to the same rigid specifications as the parts entering into the original assembly of the car, are carried in stock by Authorized Cadillac-La Salle Service Stations. They are sold at uniform prices throughout the United States, and are not subject to the addition of handling, excise or other supplementary charges. Printed price lists published by the Cadillac Motor Car Company are open to inspection by owners at any authorized Cadillac distributor's or dealer's establishment.

The Owner's Obligation

All of these service facilities are placed at the disposal of the La Salle owner, in order that his car may be a continuous source of satisfaction and utility. This result cannot be guaranteed, however, unless the owner fulfils certain definite obligations himself, as follows:

1. To drive the car at moderate speeds for the first 500 miles.
2. To operate the car in accordance with the instructions contained in this manual.
3. To check the engine oil level every 100 to 150 miles, and add oil as often as necessary to keep the indicator at "Full."
4. To check the tire pressure at least every week and keep it up to the recommended pressure—45 pounds in front, and 40 pounds in rear—on cars driven at high speeds, 50 pounds in front.
5. To add distilled water to the storage battery every 1000 miles, and in warm weather every 500 miles, or at least every two weeks.
6. To lubricate the car every 1000 miles in accordance with the lubrication schedule on page 34.
7. To take the car to an Authorized Service station for inspection every 1000 miles, or at least once a month.

Lubrication

The first five items above are details which do not necessarily warrant a visit to the service station. For lubrication, however, the owner is urged to patronize Authorized Cadillac-La Salle Service Stations, because they are prepared to furnish this service in a manner that cannot be duplicated elsewhere. Only approved lubricants are used, the specifications of which have been worked out by Cadillac engineers to give the best possible results. Workmen who

specialize on La Salle cars know exactly where lubrication points are located and how much lubricant to apply. The charge for this lubrication service is less than half a cent a mile, which includes the cost of the lubricant.

Inspection

Preventive service is a fundamental principle of Cadillac service "Preventive service" is the practice of inspecting the car at regular intervals and making those adjustments that need attention before the need becomes an emergency. Inspections should be made every 1000 miles, in order to insure transportation satisfaction. Authorized service stations will make such inspections without charge, provided no dismantling of units is necessary.

The La Salle owner is urged to take full advantage of this, not only while the car is new, but throughout its entire life.

Preventive service, rendered every 1,000 miles or once a month by an Authorized Cadillac-La Salle Service Station, is the surest guarantee of long life and complete motoring satisfaction at the least possible expense.

CHAPTER II

Operation

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ONE of the first things the driver of a new car should do is to familiarize himself with the various controls described in the following chapter.

Locks

Each car is equipped with a hexagonal-handled key which is used to operate the combination ignition and transmission lock, the door lock and the tire carrier lock. In addition, cars that have rumble seats or package compartments fitted with locks have a separate key for these compartments. The compartment key has an oval handle.

The lock number is stamped on each key, but not upon the face of the lock. The owner should make a record of the key numbers as soon as he takes delivery of his car, so that in the event both keys are lost, a duplicate key can easily be obtained from a Cadillac distributor or dealer.

Ignition Switch Lock

The lock at the lower right-hand side of the instrument panel controls both the ignition switch and the transmission lock. To unlock the car, insert the key and turn to the right. The cylinder of the lock will then slide out about half an inch, turning on the ignition and unlocking the transmission by means of a cable connection to the shifter shafts. To shut off the ignition and lock the transmission, simply push the lock cylinder all the way in. The car can be locked when the transmission is in neutral or in reverse. Do not attempt to shut off the ignition when the transmission is in any forward gear. Be sure to **remove the key** before leaving the car.

Gasoline Gauge

The gasoline gauge, marked "Fuel," is the small dial in the upper center of the instrument panel (Fig. 2). This gauge indicates in gallons the quantity of fuel in the tank at the rear of the car, and is operated electrically. To read from the gauge the quantity of fuel in the tank, the ignition must be switched on.

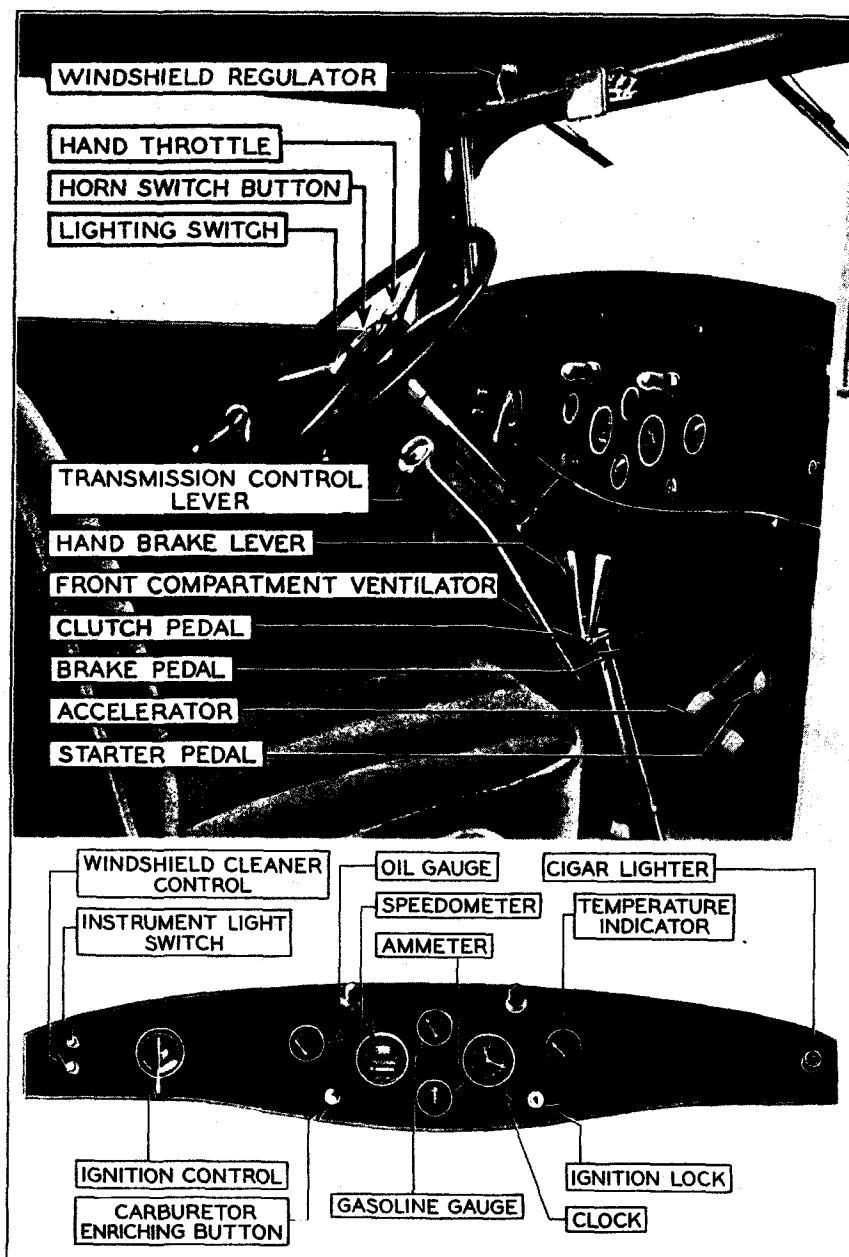


Figure 2. The new driver should familiarize himself with the instruments and controls before attempting to drive.

When the ignition is switched off, the gauge hand may come to rest anywhere on the gauge. It does not usually return to zero, nor does it ordinarily stay in the position it had before the ignition was switched off. At such times, therefore, the reading of the gauge is not a true reading. A true reading is given only when the ignition is switched on.

As filling station rules forbid running the engine while the gasoline tank is being filled, on such occasions the ignition should be switched off until the engine stops and then switched on again, and left on while the tank is being filled.

If the fuel supply should give out on the road, so that the vacuum tank on the dash becomes empty, it will be necessary after refilling the gasoline tank to prime the vacuum tank. To do this, close the throttle and hold the starter pedal down for 20 to 30 seconds. *The throttle must be closed while this is done.*

Temperature Indicator

The gauge at the extreme right of the instrument panel (Fig. 4) is a thermometer for indicating the temperature of the engine, and takes the place of a temperature indicator on the radiator. The bulb end of the thermometer is inserted in the water jacket at the rear end of the right-hand cylinder head, and is connected by a small tube to the dial on the instrument board.

Figure 4. The temperature of the water in the cylinders should range from 160° to 190°.

The normal engine temperature after the engine becomes warm is 160° to 190°.

Throttle Control

The power and speed of the engine are controlled by opening and closing a throttle valve in the carburetor. This throttle is operated both by a hand lever and a foot pedal.



Figure 3. The gasoline gauge is operated electrically by current from the ignition circuit.

The foot pedal, or accelerator, is at the right of the brake pedal (Fig. 2). The hand control is the upper lever above the steering wheel. Both controls operate the same throttle; the hand lever, however, remains in the position to which it is moved, whereas the accelerator must be held down to keep the throttle open.

The normal position of the hand lever for driving the car is all the way up (at "Close"). In this position, the throttle of the carburetor is open just enough to permit the engine to run at idling speed after it is warm. For starting, however, the lever should be moved approximately one-fourth the way down, and should be left in this position until the engine is warm enough to permit the lever to be returned to the idling position without stalling the engine. (Also see chapter on "Cold Weather Operation.")

Ignition Control

Correct timing of the ignition in relation to the positions of the pistons is controlled automatically by the timer-distributor which provides for all ordinary advancing and retarding of the spark.

A hand control is also provided, however, for further advancing or retarding of the spark as occasion requires. The hand control is the lever on the instrument board in front of the steering column. The lever has three positions, "Starting," "Driving" and "Retard." When starting the engine in *cold weather*, the lever should be moved to the "Starting" position, which is **full advance**. With the lever in this position the engine will start more easily and will operate better while warming up.

When starting the engine in mild or warm weather, it is not necessary to turn the lever to the "Starting" position. The lever can then be left at the correct "Driving" position for the fuel being used.

After the engine has become warm, the lever should be moved to a position in the "Driving" range. The correct position of the lever in the "Driving" range will then depend on the fuel used. LaSalle cars are equipped with what are known as high compression cylinder heads. These cylinder heads enable the engine to develop more power when used with anti-knock fuel.

The high-compression cylinder heads do not prevent the use of regular fuel, but when regular fuel is used the spark lever must be retarded more than is necessary with anti-knock fuel. The spark should be retarded just to the point where the engine "pings"

slightly on rapid acceleration. This slight amount of spark knock is absolutely harmless to the engine and is an indication to the driver that the spark is set at the point that will give maximum power and economy.

Carbon deposit, which accumulates with use in all engines, also causes spark knock and in time may require setting back the spark. Regardless of the kind of fuel used or the presence of carbon, the correct setting of the spark control at any time is at the point where the engine "pings" slightly on rapid acceleration.

CAUTION—If the engine is being cranked by hand the spark should always be fully retarded—**not** moved to "Starting."

Carburetor Enriching Control

The button at the left of the instrument panel (Fig. 5) controls a device on the carburetor for temporarily enriching the fuel mixture supplied to the engine. When starting the engine, it is necessary to have the proportion of liquid gasoline in the fuel mixture greater than at other times, because in a cold mixture only a part of the gasoline is vaporized. Pulling out the enriching button increases the proportion of liquid gasoline to air, the normal proportions being restored when the button is released and permitted to return to its original position.

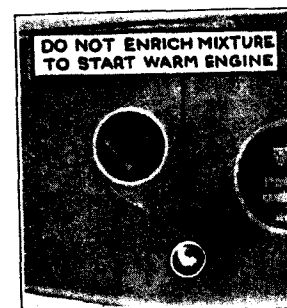


Figure 5. The carburetor enriching control does not prime the carburetor. To have any effect, it must be held out while the starter is cranking the engine.

Correct use of the enriching control not only is essential to quick starting of the engine, but also has an important effect on the life of the engine. The enriching button must be pulled out far enough in starting to provide an explosive mixture quickly so that the battery is not unnecessarily discharged by useless cranking. The button must also be held out far enough during the warming-up period so that the engine will run without missing and "popping back."

On the other hand, it should not be pulled out any further or held out any longer than is necessary to accomplish these results, because some of the excess liquid gasoline in the enriched mixture does not

burn and washes off the oil on the cylinder walls, interfering with proper lubrication of the pistons.

If the engine still retains heat from previous running, the enriching control should not be used without first attempting to start the engine on the normal mixture. If the enriching button is pulled out for starting a hot engine, the mixture may be made so rich that starting will be impossible.

The enriching button is not a priming device. It has no effect whatever on the fuel or the fuel mixture unless the engine is being cranked or is running under its own power. To have any effect, the button must be pulled out and held partly out during the cranking operation.

Carburetor Heat Control

The flow of exhaust gases through the jacket of the intake header, by which the fuel mixture from the carburetor is heated, is controlled by an automatic valve at the front end of the left-hand exhaust manifold. This valve is so designed that it keeps the intake header at the proper temperature for the most efficient running at all engine speeds, so that a hand control lever is not necessary.

Starter Pedal

The starter pedal is at the right of the accelerator (Fig. 2). Pushing this pedal forward brings into action the electric motor that cranks the engine for starting. Do not push the starter pedal when the engine is running.

The starter pedal is only one of the controls that must be manipulated to start the engine. Unless there is an explosive mixture in the cylinders and a spark to ignite it, it is useless to crank the engine. The starter pedal should not be operated, therefore, until the necessary preliminary steps have been taken. The following, in their proper order, are the various steps that must be performed to start the engine.

1. Make sure that the transmission control lever is in neutral.
2. Place the throttle lever about one-fourth the way down from the idling position.
3. In cold weather, move the ignition control lever all the way to "Starting."
4. Switch on the ignition.
5. Unless the engine is still warm, pull back the carburetor enriching button and hold it back. If the engine is still warm, do not pull

back the enriching button unless the engine fails to start on the normal mixture.

6. Push the starter pedal forward and hold it until the engine starts. Release it immediately as soon as the engine starts. (See below for probable causes for the engine failing to start.)

7. Let the carburetor enriching button partly in as soon as the engine starts, and all the way in as soon as the engine is warm enough to permit it.

8. Note whether pressure is indicated on the oil pressure gauge, and stop the engine at once if no pressure is indicated.

9. Move the throttle lever up to the idling position as soon as the engine is warm enough to permit it.

10. If the spark lever was moved to "Starting" or "Retard" move it to the best position in the "Driving" range.

In cold weather, disengage the clutch before pressing down the starter pedal, and hold it down during the cranking operation. This relieves the starter of the necessity of turning the transmission gears which are immersed in lubricant. The additional load is small in warm weather when the lubricant is thin, but in cold weather, the power required to turn the gears through the thickened lubricant adds unnecessarily to the demand upon the battery.

What to Do if the Engine Fails to Start

If the engine fails to start after being cranked for a few seconds, release the starter pedal and investigate the following possible causes:

The ignition may be switched off.

There may be no gasoline in the tank in the rear of the car.

There may be no gasoline in the vacuum tank on the dash. If the vacuum tank should be empty, prime it by closing the throttle, and with the ignition switched off, holding the starter pedal down for 20 to 30 seconds. *The throttle must be closed while this is done.* Then open the throttle, switch on the ignition, and try again to start the engine in the usual manner.

The carburetor may be flooded by unnecessary use of the enriching device when the engine is warm. To get rid of this surplus gasoline in the carburetor, open the throttle wide, and, with the ignition switched off, hold the starter pedal down for 10 to 15 seconds. Then return the throttle lever to the usual position for starting, switch on the ignition and try again to start the engine.

Oil Pressure Gauge

The small dial at the left on the instrument panel (Fig. 6) is the oil pressure gauge. This gauge does not indicate the quantity of oil in the engine. It indicates only the pressure under which the oil is forced to the engine bearings.

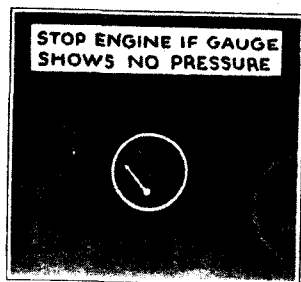


Figure 6. The oil pressure gauge does not show how much oil is in the engine—it shows pressure only. The pressure when the engine is idling should be 7 to 10 pounds.

When the engine is not running, the pointer on the oil pressure gauge should remain at zero, but as soon as the engine is started and as long as it runs, the gauge should show pressure. If the gauge does not show pressure when the engine is running, stop the engine at once and determine the cause. Serious damage may be done if the engine is run without oil pressure.

The amount of pressure indicated by the gauge depends upon the speed of the engine and the viscosity of the oil. At idling speed with fresh oil of the correct viscosity, the oil pressure after the engine is warm should be 7 to 10 lbs. Before the engine is warm, the pressure will be higher. After the oil has become thin, the pressure will be lower. These are normal variations from the standard and do not indicate need for attention.

Clutch Pedal

The clutch pedal is the left-hand pedal. When this pedal is in its normal or released position, the clutch is engaged. The flywheel of the engine is then coupled to the transmission. When the clutch pedal is pushed down, the clutch is disengaged, and the flywheel, if the engine is running, revolves independently of the transmission.

The clutch has two uses: First, to enable the car to be started gradually and without jerk or jar; second, to permit shifting of the transmission gears. The operation of the clutch pedal is discussed below in connection with the transmission control. Further comment is unnecessary at this point, except the following suggestions to the driver:

Do not drive with the foot resting on the clutch pedal. The La Salle clutch operates so easily that even the weight of the driver's foot may unintentionally cause the clutch to slip.

Do not form the practice of disengaging the clutch whenever the brakes are applied. Most occasions for use of the brakes require only slowing down without stopping or even shifting gears. A skilled driver will not touch the clutch pedal until the car is just about to stop, or until he is about to shift to a lower gear. It is a mistaken idea that applying the brakes with the clutch engaged is more severe on the brake lining. The opposite is actually the case, proof of which is in the fact that in coasting down grades, the resistance of the engine is used to assist the brakes in controlling the car speed.

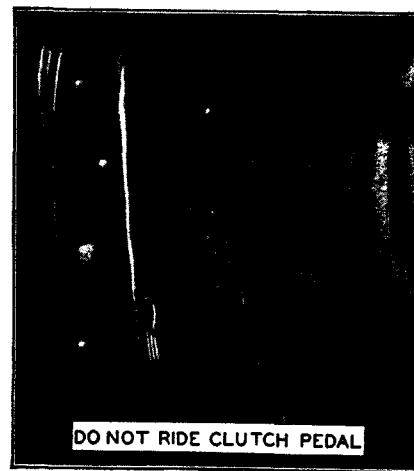


Figure 7. A good driver uses the clutch pedal only when shifting gears or about to stop.

It will be observed in operating the clutch pedal that the pedal offers almost no resistance until it has been moved about one inch. It is at this point that it actually begins to disengage the clutch. It is important that the pedal have this "lost motion." If the full pressure of the clutch springs is felt just as soon as the pedal is moved, the control rod should be readjusted. Failure to make this adjustment will result in the clutch slipping.

Transmission Control

The operation of the La Salle Syncro-mesh transmission is, in general, the same as the operation of the conventional selective sliding-gear type of transmission. The positions of the control lever for the various speed combinations are the same and the directions in which the control lever is moved are the same. It is also necessary to disengage the clutch before moving the control lever, the same as with the conventional transmission.

The only difference is in the manner of moving the control lever. With the conventional transmission, it is customary when shifting to a higher gear, to hesitate momentarily in neutral and then move the lever quickly to its new position.

With the La Salle Syncro-mesh transmission, there is no necessity either for the hesitation in neutral or for the rapid movement of the lever during the last part of the shift. Instead, the movement of the control lever should be one smooth, continuous movement.

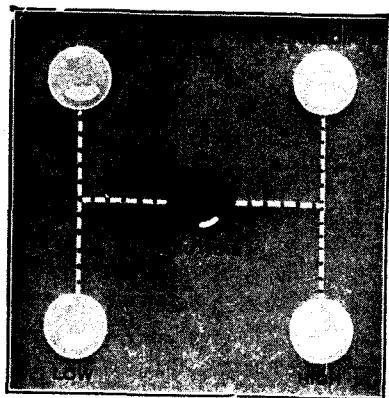


Figure 8. The positions of the control lever are the same as for the conventional type of transmission.

Without giving a detailed explanation of the synchronizing mechanism, it may be said that its purpose is to secure noiseless shifting of the control mechanism by automatically synchronizing (or equalizing) the speeds of the two members which are to be coupled together, before the shift is made.

This synchronizing effect is brought about by a pair of friction clutches of simple cone-type, which are actuated by the control lever through a cam mechanism.

As the control lever leaves the neutral position, it engages one or the other of these clutches just long enough to synchronize the two members, so that when the final movement of the control lever is made, the teeth which interlock to take the drive are traveling at exactly the same rate of speed.

The synchronizing principle applies to all shifts into intermediate or high; in other words, to the following shifts:

- Low to intermediate
- Intermediate to high
- High to intermediate

There is no synchronizing mechanism for low or reverse gears, because shifts into these gears are usually made when the car is standing still. When shifting from neutral to low or reverse, therefore, it may be necessary to wait an instant after disengaging the clutch, to give the gears a chance to stop "spinning." Do not attempt to shift from intermediate to low unless the car is standing still or moving very slowly.

If, when descending a grade at high-speed, it becomes desirable to shift from high to intermediate in order to use the engine as a brake,

re-engage the clutch slowly after making the shift. This will bring the engine up to speed gradually and avoid the sudden load that would otherwise be imposed upon the clutch.

The ease and certainty with which a noiseless shift can be made with the new transmission may tempt some drivers to perform "stunts" for which it is not intended. The synchronizing principle makes it possible for the driver to make use of intermediate speed at any time that it is an advantage to do so, without having to worry whether he will get "into gear" successfully. There is no advantage to be gained, however, in using intermediate at speeds above 30 miles per hour, and any attempt to shift at higher speeds should be regarded as abuse.

Coasting

To coast on the level, simply release the accelerator pedal and disengage the clutch. If coasting to a stop, the transmission control may also be shifted to neutral and the clutch re-engaged.

In coasting down grades, however, it is recommended that the transmission be left in gear and the clutch engaged. With the throttle in the idling position, the car is thus made to drive the engine, the resistance of which assists the brakes and saves wear on the brake lining. It must be remembered that the brakes are subjected to much more severe use on grades than on the level because gravity acts continuously, whereas on the level, the brakes need absorb only the momentum of the car. Even on slight grades, coasting with the transmission in neutral or the clutch disengaged is not advisable. On any grade steep enough to warrant coasting, it is worth while to save the brakes as much as possible by utilizing the braking effect of the engine.

Ordinarily, the resistance offered by the engine when the transmission is in high is sufficient to control the speed of the car, supplemented by moderate use of the brakes. On steep grades, however, the transmission control should be shifted to intermediate.

Do not switch off the ignition when coasting with the car driving the engine. Contrary to a common impression, this does not appreciably increase the resistance and is likely to cause damage to the engine. Even with the throttle closed, some fuel is admitted to the cylinders, and if this is not burned, it condenses on the cylinder walls and washes off the oil by which the pistons are lubricated.

Brakes

The foot brakes, operated by the right-hand pedal, are internal brakes of the shoe type, applied on all four wheels through a mechanical linkage.

The front wheel brakes are designed so that, if applied while the steering wheel is turned to the right or left, only the brake on the inside wheel is effective and the brake on the outer wheel is released, leaving it free to rotate. It is thus impossible to lock both front wheels, even on slippery pavement unless the car is moving straight ahead.

Gradual application of the brakes will provide sufficient stopping power, and will result in less strain on the mechanism, so the brakes should not be applied suddenly except in an emergency. This is particularly true in crowded traffic, for a vehicle following may not have such efficient brakes.

When applying the brakes on wet asphalt streets or slippery roads, do not disengage the clutch until the car is almost stopped. Do not attempt sudden stops. La Salle four-wheel brakes minimize the possibility of skidding under these conditions, but their effectiveness should not induce anyone to drive less carefully.

As the brake lining wears, the pedal must be pushed farther down to apply the brakes. Do not wait until the pedal goes all the way to the floor board before having the brakes readjusted. Readjustment is recommended as soon as the pedal must be pushed down to within one inch of the floor board. A temporary adjustment of the foot brakes is explained on page 51.

For parking, the brakes are operated by the hand lever at the right of the transmission control lever.

Speedometer

The lower dial of the speedometer, which is for recording "trip" mileage, can be reset to zero by pushing up and turning the knurled stem back of the instrument board.

Across the speedometer cover glass and below the total mileage dial is a strip of black celluloid on which are two white spaces. These spaces are for the lubrication notice described on page 33 in connection with the lubrication schedule. Use this notice in accordance with the schedule.

An automobile repairman should never be permitted to attempt to adjust or repair the speedometer head or to replace the glass. This work can be done only by men experienced in speedometer work, and only with special machinery and tools. If the speedometer head is removed, handle it as carefully as a fine watch. The speedometer head may easily be damaged by rough handling.

Ammeter

The lower dial on the instrument panel (Fig. 9) is the ammeter, which measures the electric current flowing to or from the battery at all times, except when the starter is cranking the engine. When current is flowing from the battery, the ammeter shows a reading on the side marked "Discharge;" when current is flowing to the battery, the ammeter reading is on the "Charge" side.

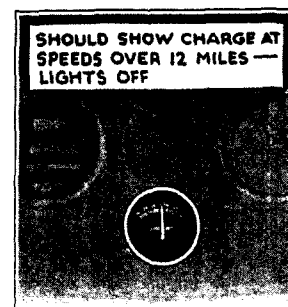


Figure 9. The ammeter indicates the amount of electrical current flowing to or from the battery.

The ammeter should indicate on the "Charge" side most of the time. Otherwise, more current will be taken out of the battery than is put into it, and the battery will eventually become fully discharged. When the engine is not running, the ammeter will indicate a current on the discharge side, depending in amount

upon the number of lights in use. The rate of charge or discharge when the engine is running depends upon the speed of the engine and the number of lights in use, and is equal in amount to the difference between the current generated and the current used by the lights, horn, ignition and other electrical devices.

Ordinarily, when no lights are in use, the ammeter should show "Charge" as soon as the car is running ten or twelve miles per hour in high gear. If the ammeter should show "Discharge" with all lights off, either when the engine is not running or when the car is running more than twelve miles per hour, the cause should be investigated.

Lighting Switch

The lighting switch control is at the upper end of the steering column in the center of the steering wheel. The lever has three positions besides the "off" position, which is the straight down position. Turning

the lever to the left turns on the parking lamps on the fenders and the rear lamp. The first position of the lever when turned to the right switches on the headlamp lower beams and the rear lamp, while the second position to the right switches on the headlamp upper beams and the rear lamp.

The headlamp bulbs have two filaments, one above the other, instead of the customary single filament. Both filaments are of the same candle-power (21), but because they are located in different positions with respect to the reflector, the beam of light from one filament is projected at a different angle from the other. When the switch lever is at the upper position to the right, one set of filaments is lighted and the beams are projected straight ahead, illuminating the road at a distance. When the lever is at the lower position, the other filaments are lighted and the beams are projected down at an angle, illuminating more brightly the road directly in front of the car.

The practice to be followed by the driver in using this double-beam feature of the headlamps will depend upon local regulations. In general, it is expected that the upper beams will be used except on the following occasions: When passing a vehicle approaching from the opposite direction, when rounding a sharp curve and when topping the crest of a hill. On these occasions, and at other times when illumination is desired directly in front of the car, the lower beams should be used.

The instrument lamps are controlled by a separate switch at the left-hand end of the instrument board.

The lamp bulbs that are used are as follows:

Lamp	Voltage	Candle Power
Headlamps	6-8	21 (Two-Filament) Mazda No. 1110
Stop lamp	6-8	15
Parking lamps	6-8	3
Instrument lamps (2)	6-8	
Rear lamp	6-8	
Closed car lamps	6-8	

Danger of Running Engine in Closed Garage

Every person having to do with the operation or care of a motor car should be warned of the danger that attends running the engine while the car is in a small closed garage.

Carbon monoxide, a deadly poisonous gas, is present in the exhaust of all internal combustion engines. Most people are already familiar

with carbon monoxide in the form of illuminating gas, or in the gas produced by furnaces and stoves when insufficient air is supplied to give complete combustion. But illuminating gas and coal gas have an unpleasant odor, which serves as a warning, whereas carbon monoxide, as produced in the internal combustion engine, is colorless, tasteless, and almost odorless, so that the victim may be overcome before he is aware of the danger. When the engine exhausts into the open air, the carbon monoxide is so diluted that it has no effect. It is when the engine is run for a time in a closed room that the proportion of carbon monoxide in the air may increase to the point at which continued breathing of it would be fatal. The United States Public Health Service advises that the average automobile engine warming up in a single-car garage will give off enough carbon monoxide in three minutes to endanger life.

Proper precaution must be taken in cold weather when the natural tendency is to keep the garage doors and windows closed. The practice of letting the engine warm up in a closed garage before opening the doors is unsafe. The risk is made greater by the fact that the enriching of the mixture by manipulation of the carburetor enriching device increases the amount of carbon monoxide formed.

CHAPTER III

Equipment

THE controls and instruments used in driving have already been described. In addition to these, the car is equipped with various devices which are for the convenience and comfort of the occupants, and are used only as occasion demands. It is suggested that the driver anticipate his use of such equipment by becoming familiar at once with the directions contained in this chapter.

Windshield and Ventilation

La Salle closed cars are equipped with a one-piece windshield, which can be moved up and down. Movement of the glass is controlled by a handle above the windshield. To raise the glass, the handle should be turned clockwise, and to lower the glass, the handle should be turned counter-clockwise.

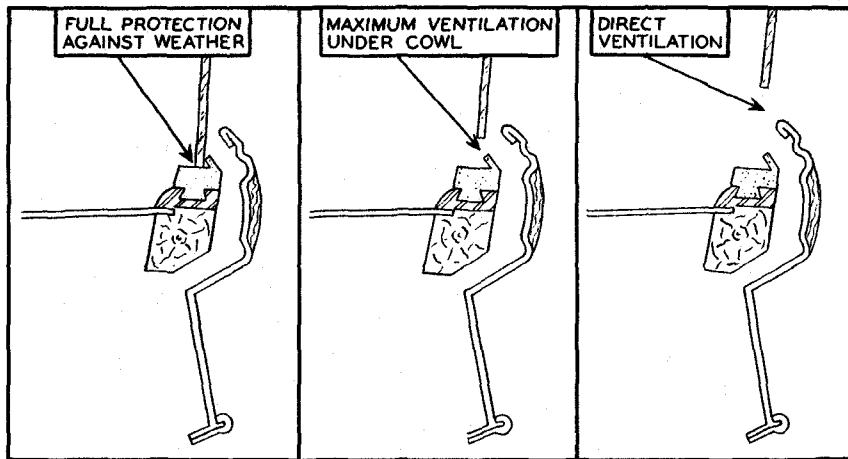


Figure 10. The closed car windshield has three positions: the position shown in the center is best for warm weather.

For ventilation under the cowl, the windshield should be raised not more than one inch, so that the lower edge of the glass is still below the ledge over the instrument board. With the windshield in this position, air is deflected into the driving compartment through an opening in the cowl, just forward of the instrument board. If desired, the windshield can be raised above the level of the ledge over the instrument board, and air will then enter directly into the car. In this position, however, less air will be forced down under the cowl. (Fig. 10.)

(24)

Cowl ventilators are also provided on the closed cars to supplement the ventilation provided by the windshield. These ventilators are at the sides of the cowl compartment and open toward the rear, serving as outlets for the air entering under the windshield.

Windshield Cleaner

The windshield cleaner consists of two wiper blades, operated by the suction or vacuum in the passages between the carburetor and the engine. The cleaner is controlled by the lower button at the extreme left-hand end of the instrument board. This button has two positions. In the first position, both blades operate on the left side of the windshield; in the second position, the blades clean the entire windshield.

Adjustable Seat

The driver's seat is adjustable on all La Salle closed cars, except those that are intended to be chauffeur-driven. Except on the five-passenger coupe, the entire front seat can be moved forward or backward. This adjustment is controlled by a handle on the center of the seat base, about three inches above the floorboards. To move the seat forward, turn the handle clockwise; to move it backward, counter-clockwise. The handle must be turned one-half turn at a time.

As the front seat on the five-passenger coupe is divided, only the driver's half of the seat is adjustable. The handle for making the adjustment is on the side of the seat, otherwise the adjustment is the same.

Cigar Lighters

The cigar lighter at the extreme right of the instrument board is fastened to a flexible cord. To use the lighter, pull it out from the instrument board at least a foot, wait a few seconds for the heating element to heat and apply it to the cigar or cigarette. The current is automatically switched on as soon as ten or twelve inches of the cord have been unreeled. To light a pipe, remove the nickel-plated shield by turning it slightly counter-clockwise and pulling it straight off.

The smoking sets of Sedan models are equipped with a cordless cigar lighter that can be passed around. To use this lighter, depress the switch on the side of the lighter, hold it in place until the heating element gets red and lift the lighter out for use.

Tools

The compartment for tools is under the front seat. When placing tools in the compartment be sure they are placed so that they do not interfere with the operation of the seat adjustment.

The tools comprising the standard equipment are listed below, and are illustrated in Fig. 11. Items listed opposite Nos. 14, 15, 16, and 17 are not illustrated.

- | | |
|-------------------------------|--|
| 1. Hammer | 10. Grease gun |
| 2. Monkey wrench | 11. Hub cap wrench (wrench for wire wheel shown) |
| 3. Large screw driver | 12. Jack handle |
| 4. Pliers | 13. Jack |
| 5. Crescent adjustable wrench | 14. Brace wrench |
| 6. Small screw driver | 15. Tool bag |
| 7. Oil can | 16. Lubrication chart |
| 8. Hand starting crank | 17. Operator's Manual |
| 9. Spark plug wrench | |

Tires

Tire Valve Caps

The valve caps used with some makes of tires are a combination dust and valve cap. This type of cap can be removed and installed without screwing the cap the entire length of the threads on the valve stem.

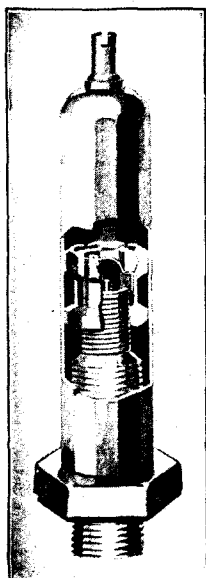


Figure 12. Tire valve cap.

To remove one of these valve caps, turn it two or three turns counter-clockwise. This loosens the sliding nut inside the cap. Next, pull the cap up as far as it will go. Then remove the cap by unscrewing it the rest of the way.

To install a valve cap, place the cap over the valve stem and turn it a few turns clockwise to engage the threads in the sliding nut. If the sliding nut is too far inside the cap to be reached by the valve stem, shake the nut down by tapping the bottom of the cap on some solid object. When the valve stem has been started in the sliding nut, push the cap down over the stem as far as it will go. Then turn the cap until it locks tightly.

Inflation Pressure

For normal driving, the front tires should be inflated to a pressure of 45 lbs. and the rear tires to 40 lbs. The inflation pressure should be checked at least weekly, and should never be permitted to drop more than 5 lbs.

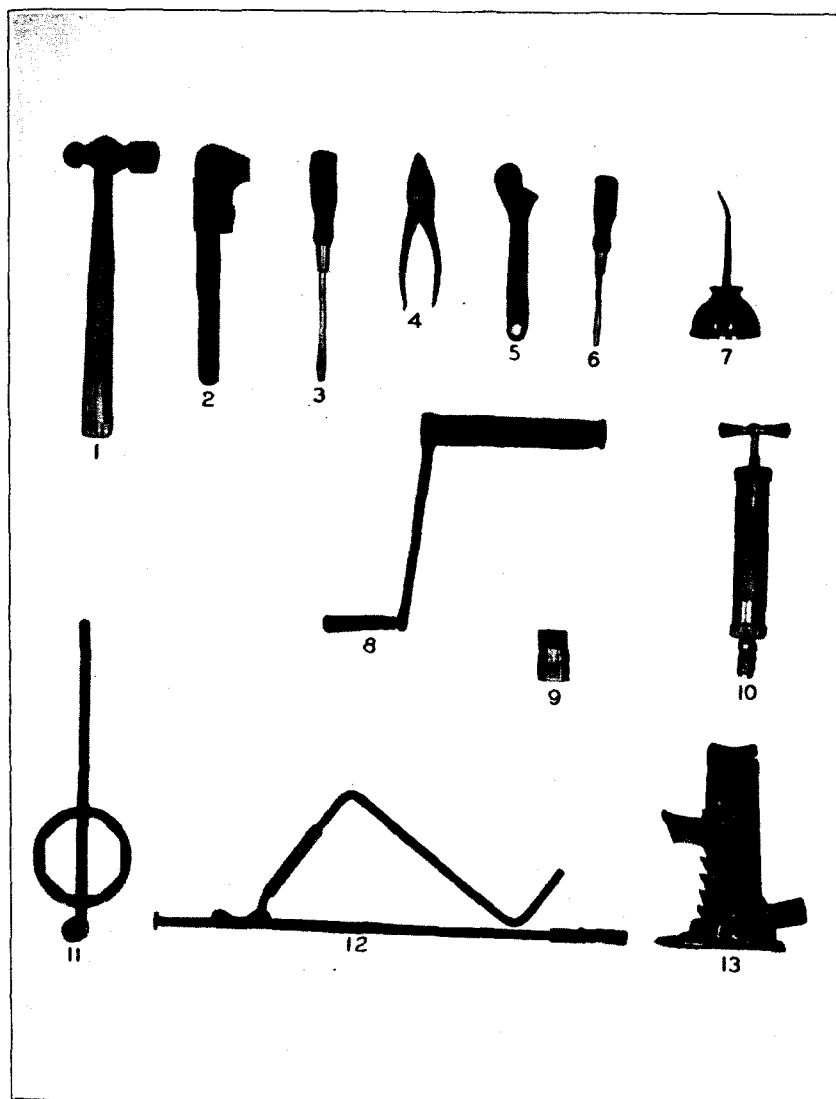


Figure 11. The tools are carried in the compartment under the front seat. See page 26 for the name and use of each tool.

On cars driven at high speeds, the front tires should be inflated to 50 lbs. This is important.

Tire Carrier (Standard Wood Wheels)

To remove the spare tire from the carrier, proceed as follows: Insert the key in the lock and turn it to the right.

Remove the lock, using the key as a handle.

Unscrew the clamping screw with the wrench furnished in the tool equipment.

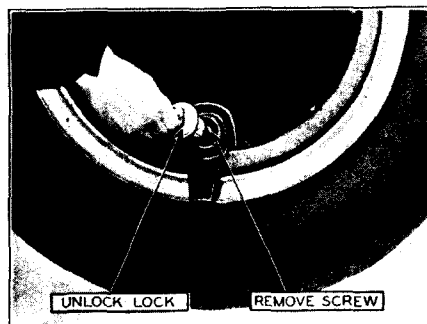


Figure 13. To remove the spare tire, unlock the lock, remove the screw and take off the clamp.

lock and take it out, using the key as a handle. Then unscrew the clamping screw underneath the lock, after which the large dust shield can be removed and the wheel taken off the carrier.

To reinstall a spare wheel, mount it on the carrier, place the large dust shield in position and tighten the clamping screw. Then snap the lock back into place.

These instructions apply both to spare wheel carriers on the rear of the car and to carriers in the front fender.

Truing up Rim

If a rim on a standard wood wheel does not run true, it may be trued up in the following manner.

Remove the rim clamp, taking care not to lose the clamping screw.

Remove the tire with rim, by pulling it out at the bottom and then lifting it off the carrier.

To place a tire and rim on the carrier, reverse the above order. After tightening the clamping screw, unlock the lock and put it into place.

Spare Wheel Carrier

To remove a spare wheel from the carrier, unlock the

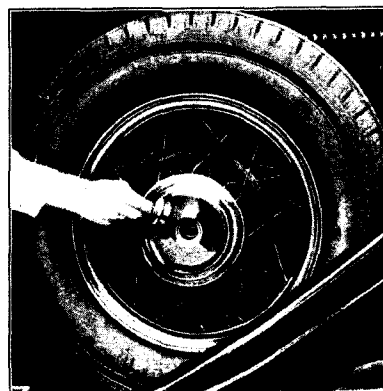
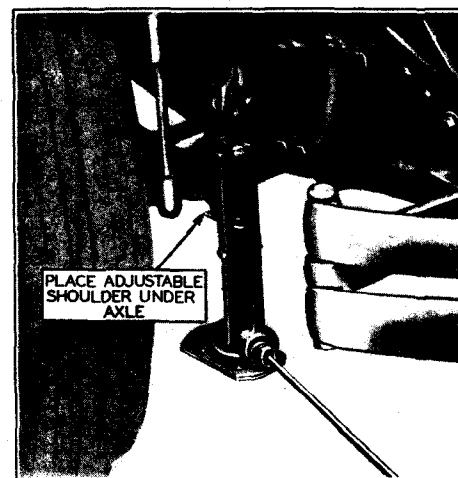


Figure 14. When spare wheels are carried in the fenders, the lock must be removed, after which the screw can be taken out and the wheel lifted from the carrier.

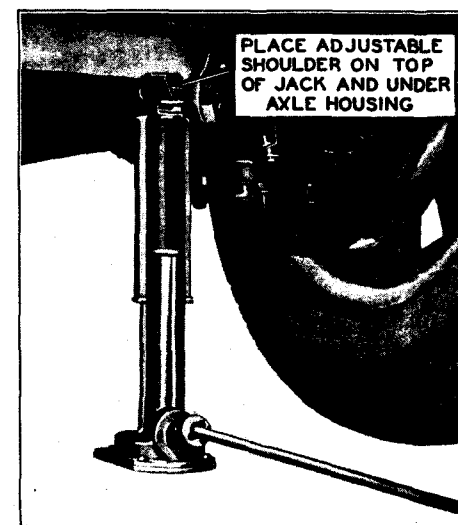
Rotate the wheel slowly and mark the part that runs farthest out from the face of the wheel. Loosen slightly the nuts diametrically opposite the mark and then tighten the nuts on the marked side. Test the wheel again, and if it still does not run true, repeat the operation.



Use of Jack in Changing Tires

When a tire is "flat," the axle is not always far enough above the ground to permit placing the jack directly under the axle. It is then necessary to make use of the adjustable shoulder which engages with teeth on the side of the jack.

The illustrations in Figure 15 show how the adjustable shoulder should be placed under the axle.



Changing Tires

If an inflated spare tire is always carried on the spare rim or wheel, the driver will seldom or never have to disassemble a tire from the rim. In case of tire trouble, it is then merely necessary to remove the rim or wheel with the flat tire and then install the spare in its place. Illustrated directions for performing this work on standard wood and on wire wheels are given on pages 31 and 32. Disc and demountable wood wheels are changed in the same manner as wire wheels except that the hub caps should not be removed.

Figure 15. To jack up the car, it is necessary to have the jack in the proper position under the axle. The correct position for the front axle is shown above and for the rear axle, below.

Tire Balancing Marks

The tires are balanced to offset the weight of the valve stem. If a tire is removed, it must be reinstalled in its original position with respect to the rim; otherwise the tire and wheel will be unbalanced.

A small red square is accordingly branded in the rubber on the side of each tire. This mark must always be in line with the valve stem.

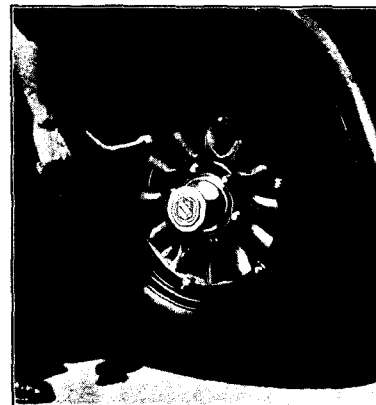


Figure 16a. Jack up the wheel until the tire clears the ground. Remove the dust cap and clamping nut from the valve stem. Remove the six rim clamps, unscrewing them with the brace wrench supplied in the tool kit.



Figure 16b. Rotate the wheel until the valve stem is at the top, and pull the bottom of the rim away from the wheel.

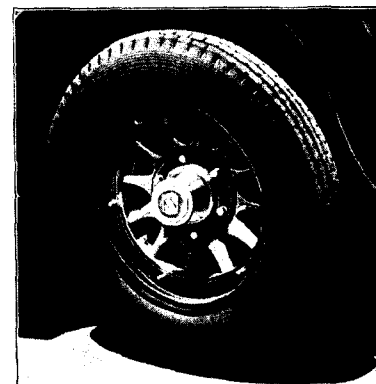


Figure 16c. Then rotate the wheel until the valve stem approaches the bottom, when the rim and tire will roll free from the wheel and can be removed without lifting.

To mount a rim, rotate the wheel until the hole for the valve stem is in the position shown in the last illustration. Insert the valve stem and rotate the wheel, which will carry the rim with it, until the valve stem is at the top. Then push the lower part of the rim into place. Install the rim clamps over the rim and turn the nuts partly down. Go over the nuts again and tighten them firmly. Install the valve stem clamping nut and the dust cap. Be sure the clamping nut is tight.

Figure 16. Changing Rims (Standard wood wheels).



Figure 17a. Remove the hub cap with the wrench in the tool kit. Hub caps are marked with arrows showing the direction in which they screw on and off.

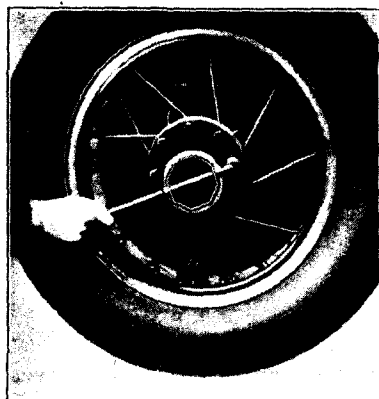


Figure 17b. Jack up the axle until the weight of the car is off of the wheel, but with the tire still dragging. Loosen the cap screws around the wheel hub by turning them in a counter-clockwise direction with the wrench. Then jack the wheel up further, remove the cap screws and take the wheel off of the hub.

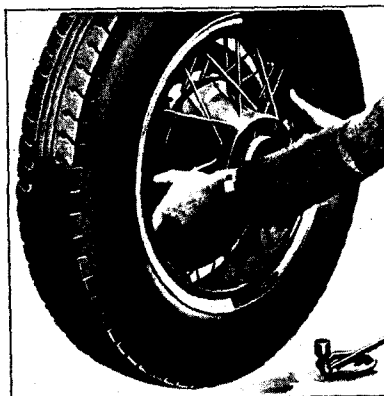


Figure 17c. To mount a wheel, simply set it up on the hub and start the cap screws by hand. Then tighten the screws with the wrench, but do not tighten them in rotation. After tightening one screw, tighten the screw directly opposite.

Figure 17. Changing Wire Wheels.

CHAPTER IV

Lubrication

Lubrication Schedule

SYSTEMATIC lubrication, at regular mileage intervals, is the only kind that is effective. On page 34 is a complete lubrication schedule which, if faithfully followed, will insure correct lubrication for each wearing surface of the La Salle car.

The unit of the schedule is 12000 miles, which is divided into twelve 1000-mile intervals. Corresponding to these is a series of twelve consecutive groups of lubricating operations. When the car has traveled 1000 miles, the points enumerated under Lubrication No. 1 should receive attention. At 2000 miles, Lubrication No. 2 is due, and so on, until at 12000 miles, Lubrication No. 12 should be performed. At 13000 miles, the schedule begins again with Lubrication No. 1.

It will be noticed from the schedule that there are actually only four different lubrication operations, but that they are numbered according to the various times that they come due.

Lubrication Notice

In order that the driver may be continually reminded of the mileage at which the next lubrication is due, the speedometer is provided with a lubrication notice. This consists of a strip of black celluloid (Fig. 25) which is placed across the speedometer cover glass below the total mileage dial, and which has two white spaces, one for the lubrication number and one for the mileage at which it is due.

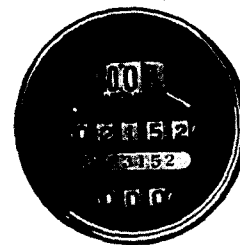


Figure 18. The lubrication notice is a continual reminder of when the next lubrication is due.

Whenever the car is lubricated on the schedule, the figures then on the celluloid should be erased and the next lubrication number, and the mileage at which it is due, should be written or stamped in their places. If this notice is used, the driver need only glance occasionally at the speedometer and compare the mileage on the dial with the figures on the notice, in order to plan for the necessary attention.



LUBRICATION SCHEDULE

CADILLAC 353, 341A, 341B
LASALLE 340, 328, 303

OWNER'S NAME _____

ADDRESS _____

ENGINE NO. _____ DATE DELIVERED _____

DO NOT WAIT FOR SCHEDULE LUBRICATIONS BEFORE ADDING ENGINE OIL. THE OIL LEVEL SHOULD BE CHECKED EVERY 100 TO 150 MILES AND OIL ADDED IF THE INDICATOR BALL IS BELOW "FULL." THIS IS ESPECIALLY IMPORTANT ON CARS DRIVEN AT HIGH SPEEDS.

LUBRICANT

LUBRICATION NO. AND MILEAGE AT WHICH DUE

1 2 3 4 5 6 7 8 9 10 11 12
1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 11000 12000

LUBRICATION NOS. 6 AND 12 LUBRICATION NOS. 3 AND 9 LUBRICATION NOS. 2, 4, 8 AND 10 LUBRICATION NOS. 1, 5, 7 AND 11	ADD LIQUID TO RADIATOR	WATER OR ANTI-FREEZE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	ADD ENGINE OIL AS NECESSARY	ENGINE OIL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	STARTER, GENERATOR AND DISTRIBUTOR OIL CUPS	ENGINE OIL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	FAN (303, 328, 341 ONLY)	ENGINE OIL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	BRAKE PINS AND CONNECTIONS	ENGINE OIL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	DOOR HARDWARE	ENGINE OIL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	SPRING LEAVES (WITHOUT SPRING COVERS)	ENGINE OIL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	GREASE GUN CONNECTIONS	CHASSIS GREASE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	WATER PUMP GREASE CUP	WHEEL BEARING GREASE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	*ADD WATER TO STORAGE BATTERY	DISTILLED WATER	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	CHECK TIRE INFLATION		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	DRAIN AND REPLACE ENGINE OIL	ENGINE OIL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LUBRICATION NOS. 6 AND 12 LUBRICATION NOS. 3 AND 9 LUBRICATION NOS. 2, 4, 8 AND 10 LUBRICATION NOS. 1, 5, 7 AND 11	CLUTCH RELEASE BEARING	WHEEL BEARING GREASE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	TRANSMISSION—ADD LUBRICANT	GEAR LUBRICANT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	REAR AXLE—ADD LUBRICANT	GEAR LUBRICANT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	STEERING GEAR—ADD LUBRICANT	GEAR LUBRICANT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	TIMER DISTRIBUTOR CAM (340, 353 ONLY)	LIGHT ENGINE OIL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	FRONT BRAKE TRUNNIONS (ALL CARS)	CHASSIS GREASE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	WHEEL BEARINGS	WHEEL BEARING GREASE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	SPEEDOMETER DRIVE SHAFT	WHEEL BEARING GREASE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	**REFILL SHOCK ABSORBERS	SPECIAL OIL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	**FLUSH COOLING SYSTEM		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	**REPLACE OIL FILTER CARTRIDGE AND CLEAN OIL PAN AND SCREEN		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

*IN SUMMER INSPECT BATTERY EVERY 500 MILES OR AT LEAST EVERY 2 WEEKS.

**RECOMMENDED BUT NOT INCLUDED IN LUBRICATIONS 6 AND 12.

THE FOLLOWING OPERATIONS CANNOT BE PLACED ON A MILEAGE BASIS AND ARE NOT INCLUDED IN THE ABOVE SCHEDULE:

THIN REAR AXLE AND TRANSMISSION LUBRICANT—AS REQUIRED FOR LOW TEMPERATURES.
DRAIN AND REPLACE REAR AXLE AND TRANSMISSION LUBRICANT—AT BEGINNING OF MILD WEATHER IN SPRING.
REMOVE SPRING COVERS ONCE A SEASON AND REPACK WITH PETROLEUM JELLY.

RECORD ON OTHER SIDE

Although this schedule is expressed in terms of miles, it is intended that the car be lubricated once each month if the mileage traveled is less than 1000 since the last lubrication operation was performed. This lubrication work can be done while the car is in the service station for its regular monthly or 1000-mile inspection.

Cadillac distributors and dealers are prepared to sell lubrication based on this schedule. A car that is being lubricated on the schedule can be taken to any authorized Cadillac-La Salle service station, and without further ordering than to specify "Schedule Lubrication," the car will receive the necessary attention.

Lubrication Chart

The lubrication chart (18 by 24 inches in size) which accompanies this manual gives complete detailed instructions for lubricating the car. All of the points which require lubrication are designated on this chart, together with the kind of lubricant to be used, the method of applying it and the frequency with which it should be applied.

The operations are grouped on the chart in the same manner as on the schedule shown in Fig. 19. If the car is lubricated at an "Authorized Station," this schedule will be followed; if not, whoever does the lubrication should follow the schedule and chart exactly.

Lubricants

The selection of proper lubricants should be one of the first concerns of the owner in his attention to the lubrication of the car. The lubricants must not only be of high quality, but their viscosity and other characteristics must be suited to the car.

The owner is urged to consult the distributor or dealer from whom he purchased his car in regard to the names of lubricants which have been tested and approved for use in the La Salle car.

Engine Oil

The chart of engine oil recommendations given on page 36 indicates the proper grades of oil to be used for average driving and for prolonged high speed driving.

Gear Lubricant

Lubricant conforming to the specifications for Gear Lubricant must be used in the transmission, rear axle and steering gear. It is particularly important that only recommended lubricants be used in the transmission. Oil or soap greases will *not* perform satisfactorily.

Figure 19. This is a facsimile of the La Salle Lubrication Schedule and Record Card. Provision is made on the back of the card for recording when and where the car is lubricated. A copy of this card can be obtained on request from Cadillac distributors and dealers.

Lubricants conforming to these specifications may be used without thinning during all weather except winter weather below temperatures of 20° above zero. Below this temperature, thinning with kerosene is necessary in order to secure easier gear shifting and proper lubrication of gears and bearings.

Chassis Grease

Lubricant conforming to the specifications for Chassis Grease is recommended for all chassis points fitted with grease gun connections. Do not use ordinary cup grease, as such greases are not effective enough to lubricate satisfactorily over the 1000-mile interval.

ENGINE OIL RECOMMENDATIONS

TYPE OF SERVICE	SUMMER	WINTER		
	All temperatures above 32° F.	Between 32° and 15° above	Between 15° above and 15° below zero	Below 15° below zero
AVERAGE DRIVING (No prolonged high speed driving)	*S. A. E. visc. 40 or 50	S. A. E. visc. 20	S. A. E. visc. 10 or S. A. E. visc. 20 thinned with 1 qt. kerosene to 7 qts. oil.	S. A. E. visc. 10 thinned with 1 qt. kerosene to 7 qts. oil or S. A. E. visc. 20 thinned with 2 qts. kerosene to 6 qts. oil.
		These oils are not suitable for prolonged high speed driving. Change to oil shown below before starting on long trip at speeds above 45 m. p. h.		
PROLONGED HIGH SPEED DRIVING	CADILLAC APPROVED "HEAVY DUTY" OILS—SUMMER AND WINTER These are oils having an S. A. E. viscosity of 50-60 which are required to meet certain specifications as to volatility in order to demonstrate their fitness for prolonged high speed driving. To make certain of using an oil approved for this service, consult your Cadillac distributor or dealer. NOTE: Approved lubricants vary in their suitability for winter use. If an oil with a high pour test is used in winter and the car is not kept in a heated garage, add from 1 to 2 quarts of kerosene after a long drive at high speed before the car is stored for the night. Also when draining the crankcase, add from 1 to 2 quarts of kerosene to the fresh oil, unless starting immediately on a long trip at high speed.			

*The system used in this table to designate body or viscosity is the one recently developed by the Society of Automotive Engineers and adopted by all oil companies. It takes the place of the old indefinite method of describing oils as "Light," "Medium," "Heavy," etc. Oil should be called for by these numbers. If a filling station attendant does not know the S. A. E. numbers of his oils, the following grades can be substituted in emergency: S. A. E. 10, Extra Light; S. A. E. 20, Light; S. A. E. 40, Heavy; S. A. E. 50-60, Extra Heavy.

Wheel Bearing and Cup Grease

Greases approved under the specifications for Wheel Bearing and Cup Grease are suitable for lubricating the wheel bearings, the clutch release bearing and the water pump. This grease is not recommended for chassis lubrication, as Chassis Grease is much more effective.

Engine Lubrication

The supply of oil is carried in the pressed steel reservoir that covers the bottom of the crankcase. The oil is circulated by a gear pump inside of the crankcase. The pump is driven by a vertical shaft which is in turn driven by a spiral gear on the camshaft. The oil circulated by the pump lubricates the main and connecting rod bearings, the camshaft bearings, the cylinder walls, pistons and piston pins, the front end chains, the valve mechanism and the fan.

There are a few points on the engine that are not taken care of in the pressure system. These are the starter, generator and distributor

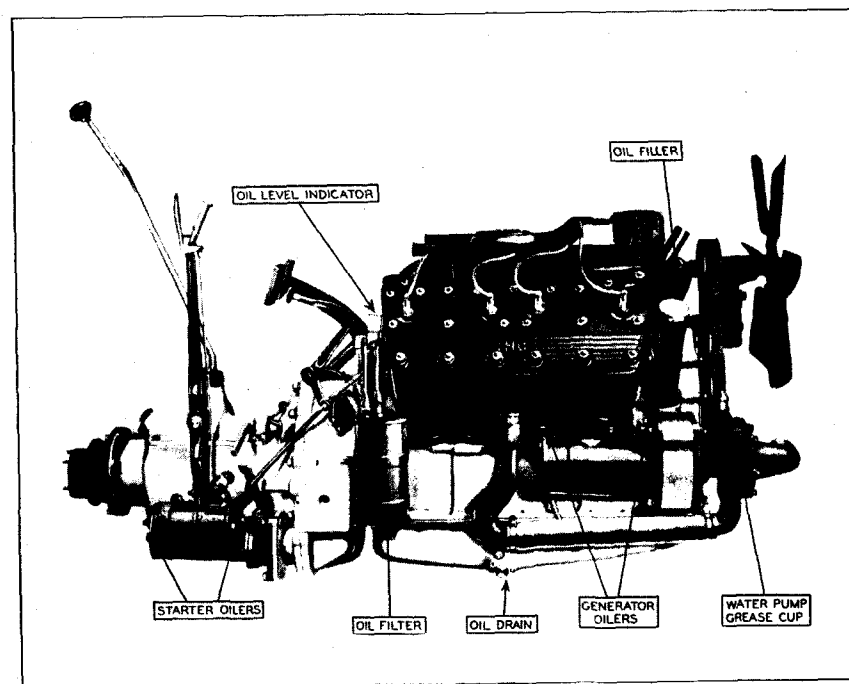


Figure 20. Showing the location of the oil filter, oil level indicator, oil pan drain plug and other lubrication features.

oil cups and the water pump. Lubricating instructions for these points are given in the lubrication chart.

Oil Level

The normal capacity of the oil pan is two gallons, which fills it to the level of the screen in the pan. When the oil pan contains this amount, the oil level indicator on the right-hand side of the engine (Fig. 20) indicates "Full." As the oil level descends, the indicator indicates "Fill" and then "MT" (Empty). Oil should be added as soon as the indicator ball has dropped to "Fill." If the indicator indicates "MT," under no circumstances should the engine be run until oil has been added.

The mileage interval at which oil must be added depends upon individual circumstances. It is recommended that the oil level indicator be checked every one hundred to one hundred and fifty miles, although it is improbable that oil will be required as frequently as this.

Crankcase Ventilating System and Oil Filter

La Salle engines are equipped with a crankcase ventilating system, which prevents contamination of the lubricating oil from seepage vapors; and an oil filter, which removes any dirt or solid matter from the oil.

The crankcase ventilating system is entirely automatic, and functions throughout the life of the car without requiring any attention from the owner. The oil filter, however, gradually becomes filled with the solid matter taken from the oil, until it becomes so clogged that it ceases to function. For this reason, it is necessary to replace the filter cartridge every 12,000 miles.

The oil pan and screen should be removed and cleaned with kerosene or gasoline whenever the oil filter cartridge is replaced.

It is important that the filter cartridge be replaced just as soon as the 12,000 miles are up. Otherwise the whole purpose of the oil filter is defeated, and wear of the engine parts will result from the dirty oil. Filter cartridges for replacement can be obtained from Cadillac distributors and dealers, or from United Motors Service stations.

Replacing Engine Oil

Although the crankcase ventilating system and the oil filter described in the preceding section greatly prolong the useful life of the oil, it is recommended that the oil be drained and replaced with fresh oil every 2000 miles.

To drain the oil, simply remove the drain plug (Fig. 20). Be sure to reinstall the drain plug before adding fresh oil. Two gallons of fresh oil should be added, or enough to bring the oil level indicator ball to "Full."

CHAPTER V

Cold Weather Operation

THE La Salle is an all-season car, and no owner need hesitate to make full use of his car in severe winter weather as well as at other times. Satisfactory operation in freezing weather, however, depends upon having the car prepared for cold weather and in giving it the special attention which is required at that time. In this chapter has been grouped all the information relating to care and operation of the car during cold weather. It should be reviewed just prior to the beginning of the winter season.

Preparing for Cold Weather

Anti-Freezing Solutions

The available commercial materials for preparing anti-freezing solutions for automobile radiators are denatured alcohol, distilled glycerine, and ethylene glycol.

Denatured alcohol solutions are, at present, the most generally used anti-freezing solutions. Denatured alcohol is widely distributed, affords protection against freezing, and is not injurious to the materials used in the cooling system.

There are two principal objections to denatured alcohol. Alcohol is lost by evaporation, especially on heavy runs, and unless the solution is tested periodically and sufficient alcohol added to replace the loss by evaporation, the engine or radiator, or both, are likely to be damaged by freezing.

The following table gives the freezing temperature and specific gravity of solutions of denatured alcohol and water:

Lowest Temperature Expected	Per cent by Volume	Specific Gravity (at 60° F.)	Qts. alcohol required to make 6 gals. solution
+10° F.	30	.9668	7 $\frac{1}{4}$
0° F.	38	.9567	9 $\frac{1}{4}$
-10° F.	45	.9485	10 $\frac{3}{4}$
-20° F.	51	.9350	12
-30° F.	57	.9260	13 $\frac{3}{4}$

(40)

The car finish is damaged by contact with the alcohol solution or vapors from the solution. Any alcohol accidentally spilled on the finish should be flushed off immediately with a large quantity of water.

Distilled glycerine and ethylene glycol solutions are, in first cost, more expensive than alcohol, but as they are not lost by evaporation, only water need be added to replace evaporation losses, except that any solution lost mechanically, such as leakage, foaming, etc., must be replaced by additional new anti-freezing solution. These solutions under ordinary conditions are not injurious to the car finish.

The principal objections to glycerine and ethylene glycol are the tendency of these solutions to loosen the scale and iron rust which forms in the water passages of the cylinder block and head, and the difficulty of securing and maintaining tight, leakproof connections. It is absolutely necessary to thoroughly clean and flush the entire cooling system before glycerine or ethylene glycol is used.

It is also necessary to tighten or replace the cylinder head gaskets and pump packing. The cylinder head gaskets must be kept tight to prevent the solution from leaking into the crankcase where it might cause gumming and sticking of the moving parts. The pump packing must be kept tight to prevent air from being drawn into the cooling system in order to avoid foaming and other difficulties which may result when air is present.

Glycerine or ethylene glycol should be used in accordance with the instructions and in the proportions recommended by the anti-freeze manufacturer.

In using a hydrometer to determine the temperature at which a solution will freeze, the test must be made at the temperature at which the hydrometer is calibrated. If the solution is warmer or colder, it must be brought to this temperature or correction must be made for the difference in temperature. Otherwise large errors may result. In some cases these errors may be as large as 30 degrees Fahrenheit.

Salt solutions, such as calcium or magnesium chloride, sodium silicate, etc., honey, glucose and sugar solutions and oils are not satisfactory for use in automobile radiators.

Capacity of Cooling System

The capacity of the cooling system is six gallons when filled to the proper level. It is not necessary to add liquid to the radiator whenever the level falls below the filler. There is sufficient liquid in the cooling system if the upper tank is half-full, and any liquid in excess of this is usually forced out through the overflow

pipe as soon as the engine becomes warm. When water is used, any loss from this cause is of little consequence, but in winter to conserve anti-freeze, it is important to avoid adding more liquid than is necessary.

Winter Lubrication

Lubrication of the car requires special attention in winter, not only to insure proper lubrication of the moving parts, but to secure the same ease of operation in starting, steering and shifting gears as during warmer weather.

The chart of engine oil recommendations on page 36 gives the proper grade of oil to be used for cold weather driving. It will be noted that lighter oils can be used for cold weather providing no prolonged high speed driving is done. For prolonged high speed driving, "Heavy duty" oils must be used. Authorized Cadillac-La Salle Service Stations are prepared with full information on winter lubrication.

The lubricant in the transmission and rear axle should also be thinned as soon as the weather is so cold that the transmission gears are hard to shift. If a sufficient amount of kerosene is added to provide for the lowest winter temperature expected, it will not be necessary to add kerosene again thereafter during the winter. If ten per cent (a little over half a pint) kerosene is added to both transmission and axle, this will take care of temperatures down to ten below zero.

Storage Battery

The electrical system of an automobile has much more to do in winter than in summer. The engine is harder to crank, and must usually be cranked longer before it starts. The lights are also used to a much greater extent than during the long days of summer. All this means that the battery must be ready for increased demands.

It is therefore a good plan, in preparing for the winter season, to see that the battery is well charged to begin with, that the battery connections are clean and tight, and that the charging rate of the generator is sufficient.

Gasoline System

The carburetor on the La Salle engine has automatic compensation for temperature. Nevertheless, it is a good plan to have the carburetor adjustment checked when cold weather arrives. This inspection should give special attention to the carburetor choke control to make sure that

the enriching device at the carburetor is fully effective when the choke button is operated.

In warm weather, a small amount of water in the gasoline has little or no effect on the running of the engine. In freezing weather, however, even a small amount of water may freeze and stop the entire flow of fuel to the carburetor.

One of the things to be done in preparing for winter weather, therefore, is to clean the gasoline filter and the sediment chambers in the gasoline system.

Starting the Engine

Carburetor Enriching Button

The first difference between starting the engine in cold weather and starting the engine in warm weather is in the greater use of the carburetor enriching device necessary in cold weather. Gasoline does not vaporize as readily at low temperatures, and in order to supply the cylinders with a gaseous mixture rich enough to be ignited, the proportion of liquid gasoline to air must be increased.

At the same time, it is important not to apply the enriching device more than is necessary. The unvaporized gasoline collects on the cylinder walls and works down past the pistons, washing off the lubricant as it goes. Although dilution of the oil supply with this unburned gasoline is minimized by the crankcase ventilating system, it is best to avoid an excess of liquid gasoline in the combustion chambers by careful and judicious use of the enriching device.

The following rule should govern the use of the enriching button in winter weather: Pull the enriching button back just as far as it is necessary to start the engine, but as soon as the engine starts, let the button return as far as possible without causing the engine to stop or slow down. Then release the button entirely as soon as the engine is warm enough to permit doing so.

Priming the Carburetor

In extremely cold weather, if the engine does not start after cranking for a few seconds with the enriching device fully applied, release the starter pedal. Then prime the carburetor by opening and closing the throttle once or twice rather rapidly with the accelerator. Opening and closing the throttle operates a throttle pump on the carburetor and raises the level of gasoline in the carburetor bowl. The carburetor

should never be primed in warm weather, and should not be primed unnecessarily in cold weather. Excessive priming is likely to make starting difficult rather than easy.

Position of Throttle Hand Lever

The correct position of the throttle hand lever for starting in cold weather is the same as for starting under other conditions, that is, about one-fourth the way down from the idling position. In warm weather, however, the lever may be returned to the idling position almost as soon as the engine is started. In cold weather, the throttle must be left slightly open until the engine becomes warm.

Position of Spark Control Lever

It is the practice of some drivers to move the spark control lever all the way to "Retard," whenever starting the engine. This is the correct position if the engine is to be cranked by hand, but if the engine is to be cranked with the starter, the spark lever should be set in the "Starting" or fully advanced position.

Use of Starter

In extremely cold weather, when the car has been standing long enough to become thoroughly chilled, it is a good plan to disengage the clutch during the cranking operation. If this is not done, the starter is called upon to turn the jackshaft gears in the transmission in addition to cranking the engine. At ordinary temperatures, the additional energy required is negligible, but in extremely cold weather, the lubricant in the transmission offers sufficient resistance to rotation of the transmission gears to increase considerably the demand upon the battery and to retard the cranking speed.

Use of Accelerator Before Engine Is Warm

In cold weather, after the engine has been started and before it has run long enough to become warm, the engine cannot deliver its normal power and it should not be called upon to do so. In accelerating the engine to start the car and in accelerating the car after the transmission is in gear, do not open the throttle suddenly or too far. To do so is not only to invite "popping back" in the carburetor, but to increase the amount of excess unvaporized gasoline in the combustion chambers, both of which results are undesirable. For this reason, also, starting in intermediate should never be attempted when the engine is cold.

CHAPTER VI

General Care

No ATTEMPT has been made to include in this manual directions for making adjustments or repairs to the car. Most La Salle owners prefer to depend for such work on authorized Cadillac-La Salle service stations, as these stations invariably are able to perform the work more conveniently and economically.

Every owner should, however, know how to perform the few simple operations of general care described in this chapter. These operations are not difficult enough to necessitate a visit to the service station, although this work can also be done in the service station, if desired.

Storage Battery

The storage battery is attached to the right-hand side bar of the frame under the front seat. It is accessible after removing the seat cushion and the cover plate.

The battery is filled with an acid solution from which the water slowly evaporates, and fresh distilled water must be added to each of the three cells at regular intervals to bring the level up to the bottom of the filling tubes. Distilled water should be added at least every 1000 miles, and in warm weather every 500 miles, or at least every two weeks. If distilled water is not available, melted artificial ice, or rain water caught in an earthenware receptacle, may be used. Hydrant water, or water that has been in contact with metallic surfaces, will cause trouble if used. Acid must never be added to the battery.

After adding water to the storage battery in freezing weather, the car should immediately be run far enough to mix the water and acid solution thoroughly. If the car is parked immediately after adding water, the water is likely to stay on top of the acid solution and may freeze, causing extensive damage.

As the storage battery is charged and discharged, the solution reacts chemically with the plates of the battery, the specific gravity of the solution changing as the reaction proceeds. The state of charge of

the battery is thus indicated by the specific gravity of the solution. As the battery is charged, the specific gravity of the solution increases, reaching 1.270 to 1.285 when the battery is fully charged. The specific gravity of the solution decreases as the battery is discharged. A fully discharged battery has a specific gravity of 1.150 to 1.165.

A hydrometer is the instrument used to measure the specific gravity of a solution. A hydrometer syringe is a hydrometer especially designed for convenience in testing the specific gravity of the acid solution in the storage battery. A hydrometer syringe can be obtained at any battery service station. Be sure and get a reliable instrument, for cheap ones may be in error as much as 25 or 30 points.

The specific gravity of the acid solution should never be tested immediately after adding distilled water. If the solution is below the plates so that it cannot be reached with the syringe, add the necessary amount of water, and then drive the car for a few hours before taking the hydrometer reading.

The battery is made by the Electric Storage Battery Company, whose general offices and works are at Alleghany Avenue and Nineteenth Street, Philadelphia. This company has representative stations in many towns, as well as sales offices and Exide battery depots in a number of the larger cities. If a storage battery is in need of attention other than recharging, it is advisable to communicate either with a Cadillac service station or with the nearest Exide station or depot.

Cooling System

The cooling system should be kept filled with 6 gallons of water, except in freezing weather, when a suitable anti-freezing solution, such as those described on page 40, must be used.

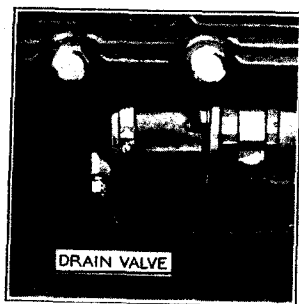


Figure 21. The entire cooling system can be drained by opening this one valve.

The drain valve for the cooling system is in the water inlet elbow on the right side of the crankcase just in back of the generator.

The cooling system should be drained and flushed every 4000 miles. If possible, this should be done at a Cadillac service station, or where there are facilities for reversing the flow of water through the radiator. If this is not possible, use the following method:

Run the engine until the opening of the radiator shutters indicates that the engine is warm. Stop the engine and immediately open the drain valve.

After the liquid has drained off, refill the cooling system with hot water and repeat the operation described above. If in draining the second time, the water is very dirty, it may be advisable to repeat the flushing operation a third time, placing one or two handfuls of sal-soda in through the radiator filler. The sal-soda must not be permitted to get on the finish of the hood or radiator. If sal-soda is used, the cooling system must be drained and flushed again before refilling for use.

Gasoline Filter

A gasoline filter (Fig. 22) is provided in the gasoline line between the vacuum tank and the carburetor. This filter has a glass bowl through which the accumulation of water and sediment can be easily seen. The bowl should be removed and the gauze screen should be cleaned, as soon as any accumulation appears in the bowl. This can be done as follows:

First shut off the gasoline by turning clockwise the small T-handle valve at the side of the filter. Then unscrew the thumb screw under the bowl, after which the yoke supporting the bowl can be swung to one side and the bowl can be removed. If the screen does not come off with the bowl, it can be removed by pulling it straight down.

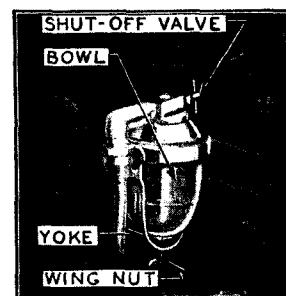


Figure 22. To remove the filter bowl for cleaning the screen, close the shut-off valve, loosen the wing nut at the bottom and disengage the supporting yoke.

In putting back the bowl, make sure that it seats properly against the cork gasket in the top of the filter before tightening the thumb screw. Do not forget to turn the gasoline on by turning the valve counter-clockwise as far as it will go.

There is also a strainer in the vacuum tank at the point where the gasoline enters the inner chamber. The strainer should be removed and cleaned occasionally. The strainer is accessible after disconnecting the feed pipe and unscrewing the inlet elbow.

Temporary Brake Adjustment

It is recommended that all adjustment of the brakes be done at an authorized Cadillac - La Salle service station. In an emergency, however the following temporary adjustment can be made by the driver:

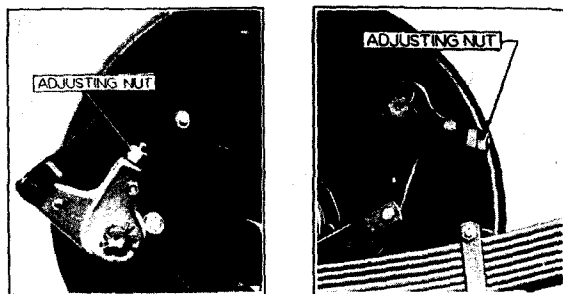


Figure 23. A temporary brake adjustment can be secured by turning the adjusting nut on each brake clockwise $\frac{1}{2}$ turn. The front brake is shown above at the left, the rear brake at the right.

Each brake is fitted with an adjusting nut, located as shown in Fig. 23. To tighten the brake adjustment, turn the nut on each brake half a turn clockwise. These adjusting nuts lock each sixth of a turn.

Body

Care of Finish

The Duco finish of La Salle bodies can be kept new and lustrous with the simplest care. The car should merely be wiped off every few days with a soft dry cloth. An occasional polishing with some recognized Duco polish, such as Cadillac I-sis (for sale by all Cadillac distributors and dealers) will prove beneficial.

If the finish is cared for by being wiped at regular intervals, it will not need to be washed, except when it has accumulated a considerable amount of mud or dust. When washing the car, use plenty of clean cold water. Do not use hot water, and do not wash the hood while it is hot, as this will in time destroy the luster. Do not use soap.

If a hose is used in washing, do not use a nozzle, but let the water flow gently from the hose and flush off the dirt gradually. A soft wool sponge can be used to advantage in removing dirt.

After the washing is completed, squeeze the sponge as dry as possible and pick up all water from crevices. Then thoroughly wet a clean soft chamois, wring it as dry as possible and dry the finish. The finish can then be rubbed with a clean soft cloth to bring out the luster.

Care of the Top

Ordinary dust can be removed from the top with a soft dry cloth. Grease spots, stains and dirt film can be removed by washing with a mild, neutral soap. Rinse thoroughly with clear water to remove all traces of the soap, then dry with a chamois or cloth. Gasoline, naphtha, kerosene and fabric cleaners should not be used for cleaning the top, as such preparations are likely to dull the luster and damage the fabric, causing leaks.

Cleaning Upholstery

To keep the upholstery in closed cars in the best condition, it should be cleaned thoroughly at least once a month with a whisk broom and vacuum cleaner. Dirt and grit accumulating in the fabric wear it out faster than use.

Spots on the upholstery may be cleaned with any good dry cleaner. When the cleaner has thoroughly evaporated, apply a hot flatiron wrapped in a wet cloth. Steaming the fabric and rubbing lightly against the nap will raise the nap to its normal position.

Door Hardware

Many owners who give careful attention to lubrication of the chassis do not give the same attention to the lubrication of door locks and hinges. If the door hardware is to operate properly, it must be lubricated regularly. Directions for this lubrication are included in the lubrication chart, and these directions should be followed as faithfully as the rest of the chart.

CHAPTER VII

Storing Car

If the car is not to be used for a period of several months, it should be protected from deterioration during the period when it is not in use by carefully preparing it for storage.

Engine

To prepare the engine for storage, proceed as follows: Run the engine until opening of the radiator shutters indicates that the engine is warm. This may be done by driving on the road or by running the engine idle. In the latter case, care should be taken that there is sufficient ventilation to avoid injury from carbon monoxide poisoning. (See page 22.)

After the engine is warm, place the car where it is to be stored, and shut off the flow of gasoline to the carburetor by turning the valve above the filter. As soon as the engine starts to slow down, raise the polished aluminum cap on top of the carburetor and inject three or four tablespoonfuls of clean fresh engine oil into the carburetor. Injection of the oil will stop the engine.

Remove the spark plugs. Inject two or three tablespoonfuls of engine oil into each spark plug hole and, before replacing the plugs, crank the engine three or four revolutions with the ignition switched off. This will tend to distribute the oil over the cylinder walls. The engine should not be started again after injecting the oil. If it is started, it will be necessary to repeat the treatment.

Drain the cooling system.

Storage Battery

If the car is to be stored during the winter, the storage battery should have special treatment in order to protect it against freezing.

Shortly before the car is used for the last time, distilled water should be added to bring the level of the solution up to the bottom of the filling tubes. (See page 45.) After the water added has had an oppor-

tunity to mix thoroughly with the acid solution by running the car or engine, the specific gravity should be taken with a hydrometer. If the specific gravity of the solution is above 1.270, there will be no danger of the acid solution freezing. If, however, the specific gravity is below 1.270, the battery should be removed and charged. Unless the battery is fully charged or nearly so, it is probable that the acid solution in the battery will freeze and cause extensive damage.

The battery ground connection should in all cases be disconnected during storage, as a slight leak in the wiring will discharge the battery and lower the specific gravity to the point where the solution may freeze.

If possible, the storage battery should be removed and charged from an outside source every two months during the storage period.

Tires

During storage of the car, it is best to remove the tires from the rims and to keep the casings and tubes in a fairly warm atmosphere away from the light. The tubes should be inflated slightly after the tires have been removed.

If it is not convenient to remove the tires from the car and the car is stored in a light place, cover the tires to protect them from strong light, which has a deteriorating effect on rubber.

The weight of the car should not be allowed to rest on tires during the storage period. If tires are not removed, the car should be blocked up so that no weight is borne by the tires. The tires should also be partly deflated.

Body and Top

A cover should be placed over the entire car to protect it from dust. In storing an open car, the top should be up.

Taking Car Out of Storage

In putting into use again a car that has been stored, it is advisable, unless the storage battery has been removed and charged at periodic intervals, to remove the battery from the car and give it a fifty-hour charge at a four-ampere rate. If the battery has received periodic charges, or if the specific gravity is above 1.200, simply add distilled

water to the proper level and connect the leads. If there is a greenish deposit on the terminals of the battery, remove this with a solution of bicarbonate of soda (common cooking soda) and water. Do not allow any of this solution to get into the battery.

Before starting the engine, drain the oil from the oil pan and remove and clean the oil pan and screen. After reinstalling the oil pan, add eight quarts of fresh engine oil. Fill the cooling system, being sure to use anti-freezing solution in freezing weather. Remove the spark plugs and inject two or three tablespoonfuls of engine oil into each cylinder. Reinstall the spark plugs and, with the ignition switched off, crank the engine a few seconds with the starter to distribute the oil over the cylinder walls.

Start the engine in the usual manner. As soon as the engine starts, immediately let the carburetor enriching button go as far forward as possible without causing the engine to stop or slow down materially, and then open the throttle until the ammeter reads approximately 10 with all lights switched off. While the engine is running, lift the aluminum cap on top of the carburetor and inject two or three tablespoonfuls of engine oil into the carburetor. It is a good plan to run the car outdoors as soon as this has been done. Release the carburetor enriching button entirely as soon as the engine is warm enough to permit it.

CHAPTER VIII

Specifications and License Data

Type of engine.....	8 cyl. V-type
Diameter of cylinder bore.....	3 $\frac{5}{16}$ in.
Length of stroke.....	4 $\frac{1}{8}$ in.
Piston displacement.....	340
Horsepower (N. A. C. C. rating).....	35.1
Engine number.....	See below
Capacity of gasoline tank.....	23 gals.
Capacity of engine lubricating system.....	2 gals.
Capacity of cooling system.....	6 gals.
Capacity of transmission.....	3 qts.
Capacity of rear axle.....	3 qts.
Wheelbase.....	134 in.
Tires, standard wood wheels.....	6.50-19
Tires, demountable wheels.....	7.00-18
Valve setting, inlet.....	.004 in.
Valve setting, exhaust.....	.006 in.
Spark plug setting.....	.025-.028 in.
Contact point setting.....	.018-.022 in.
Generator charging rate.....	18-20 amps.cold
Fan belt slack.....	1 in.
Front axle toe-in.....	$\frac{1}{8}$ to $\frac{1}{4}$ in.

Engine and Unit Assembly Numbers

Each La Salle car when shipped carries an *engine number* which is also a serial number. This is the number to be used in filling out license and insurance applications and in general reference of the car. The engine number is stamped on the crankcase just below the water inlet on the right-hand side.

The various units, such as the transmission, steering gear, etc., also carry unit assembly numbers. These are located as described below. It is important in ordering parts to give, not only the engine number of the car, but also the unit assembly number of the unit to which the part belongs.

Transmission number—on the upper left-hand edge of the flange by which the transmission is bolted to the crankcase.

Steering gear number—on the steering gear housing, just below the grease plug.

Carburetor number—on right front face of the flange by which the carburetor is attached to the intake header.

Generator number—on the side of the generator, just in front of the cut-out relay.

Starting motor number—on the right-hand side of the starter, just below the switch.

Front axle number—on the upper surface of the axle I-beam at the right-hand end, just above the steering stop screw.

Rear axle number—on the rear surface of the axle housing, just to the right of the cover plate.

Chassis (frame) number—on the upper surface of the right-hand side bar just in front of the oil filter.

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Authorized Lubrication Service

is

Complete

Every lubrication point on the car is taken care of with no attention from the owner further than bringing his car in every 1000 miles and ordering "Schedule Lubrication."

Expert

Authorized Cadillac-La Salle Service Stations have workmen who specialize on La Salle cars and know exactly where points requiring lubrication are located, what kind of lubricant to use for each point, and how much to apply. Only approved lubricants, as specified by Cadillac engineers, are used.

Economical

Charges are based on standard schedules furnished by the Cadillac factory. The actual cost of this complete lubrication service, amounts to less than half a cent a mile, which includes both labor and lubricant.

Start YOUR CAR on schedule lubrication at the end of the first 1000 miles.

The sign of
authorized



lubrication
service

FILE COPY
DO NOT REMOVE

LA SALLE LUBRICATI

Do not wait for schedule lubrications before adding engine oil. The oil level should be checked and oil added before the indicator ball drops to "Fill". This is especially important on

THIS LUBRICATION CHART is arranged to be used in conjunction with the 1000-mile lubrication schedule explained in the Operator's Manual. Lubrications No. 1, 5, 7, and 11 include the items indicated on the inner line surrounding the chassis. Lubrications No. 2, 4, 8, and 10 include the items on the second line; Numbers 3 and 9 include the items on the third line; and Numbers 6 and 12 include the items on the outside line.

The following items cannot be placed on the regular 1000-mile schedule, so they should be performed at the recommended intervals.

Every day—Check level of liquid in radiator.

Every week—Check tire pressure.

When cold weather starts—Thin engine oil with kerosene to permit easier cranking. Also thin lubricant in rear axle and transmission.

At beginning of warm weather—Drain thinned lubricant and replace with fresh lubricant.

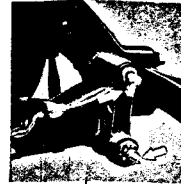
Once each season—Remove spring covers and repack with petroleum jelly.

Every 6000 miles—Check level of special oil in shock absorbers.

Every 12000 miles—Replace oil filter cartridge. Remove and clean engine oil pan and screen at same time.

Rear Shackles of Rear Springs
2 each side

Apply chassis grease to connections with grease gun every 1000 miles.



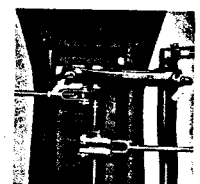
Brake Shafts on Axle
2 each side

Apply chassis grease to connections with grease gun every 1000 miles.



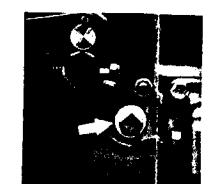
Brake Shafts Under Cross-Member
2 each side

Apply chassis grease to connections with grease gun every 1000 miles.



Transmission

Add gear lubricant to bring level up to filler hole every 3000 miles. See special instructions for cold weather.

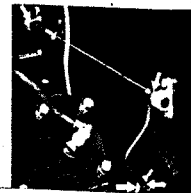


Clutch Pedal and Release Fork
2 as shown

Apply chassis grease to connections with grease gun every 1000 miles.



Steering Knuckles
Add grease to bring level up every 3000 miles



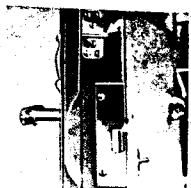
Accelerator Rocker Shaft

Apply a few drops of engine oil to the points indicated every 1000 miles.

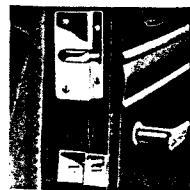


Starter Pedal Rocker Shaft

Apply a few drops of engine oil to the points indicated every 1000 miles.



It is a good plan to apply a few drops of oil to the brake clevis pins at the same time.

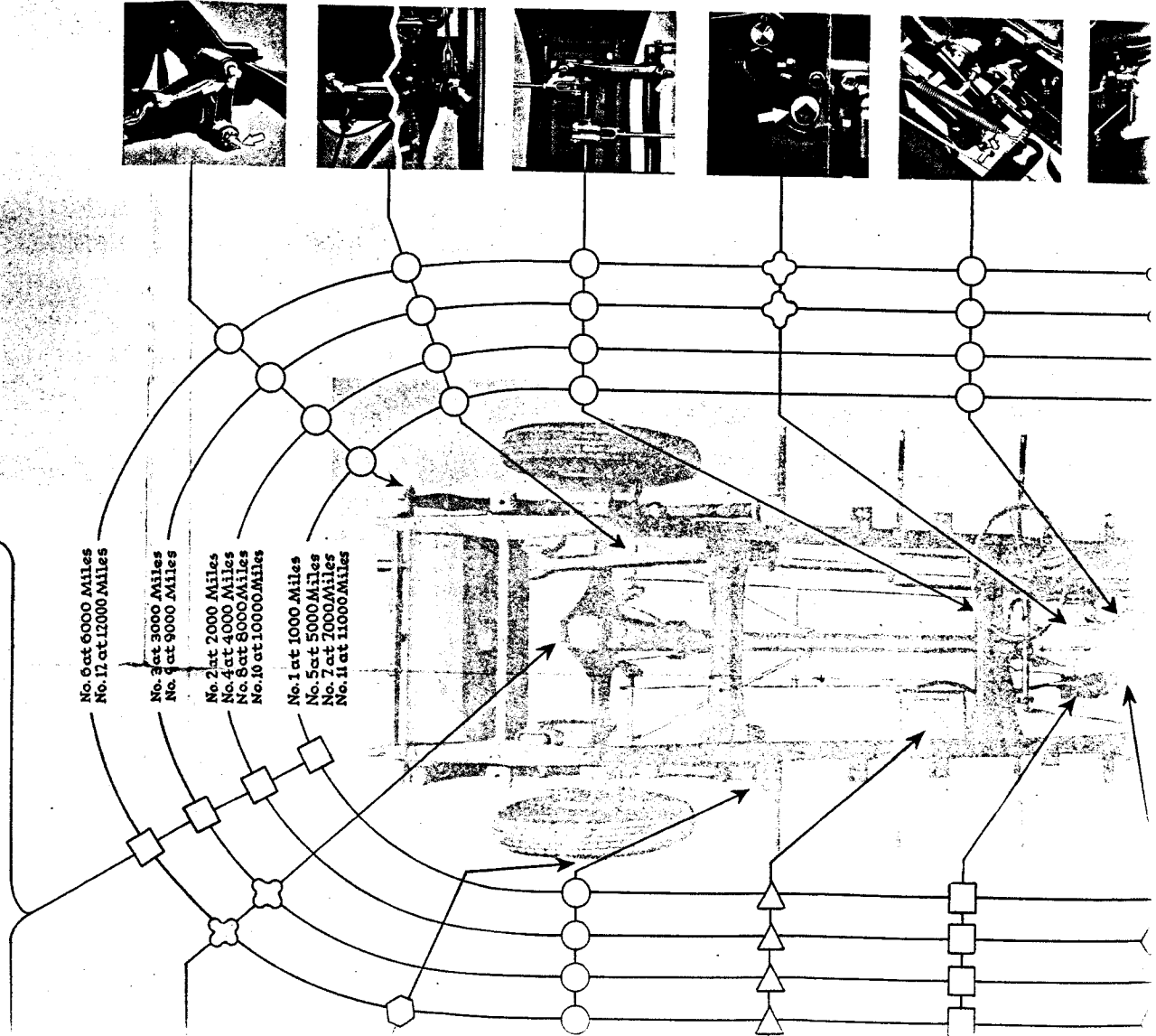


No. 6 at 6000 Miles
No. 12 at 12000 Miles

No. 3 at 3000 Miles
No. 9 at 9000 Miles

No. 2 at 2000 Miles
No. 4 at 4000 Miles
No. 8 at 8000 Miles
No. 10 at 10000 Miles

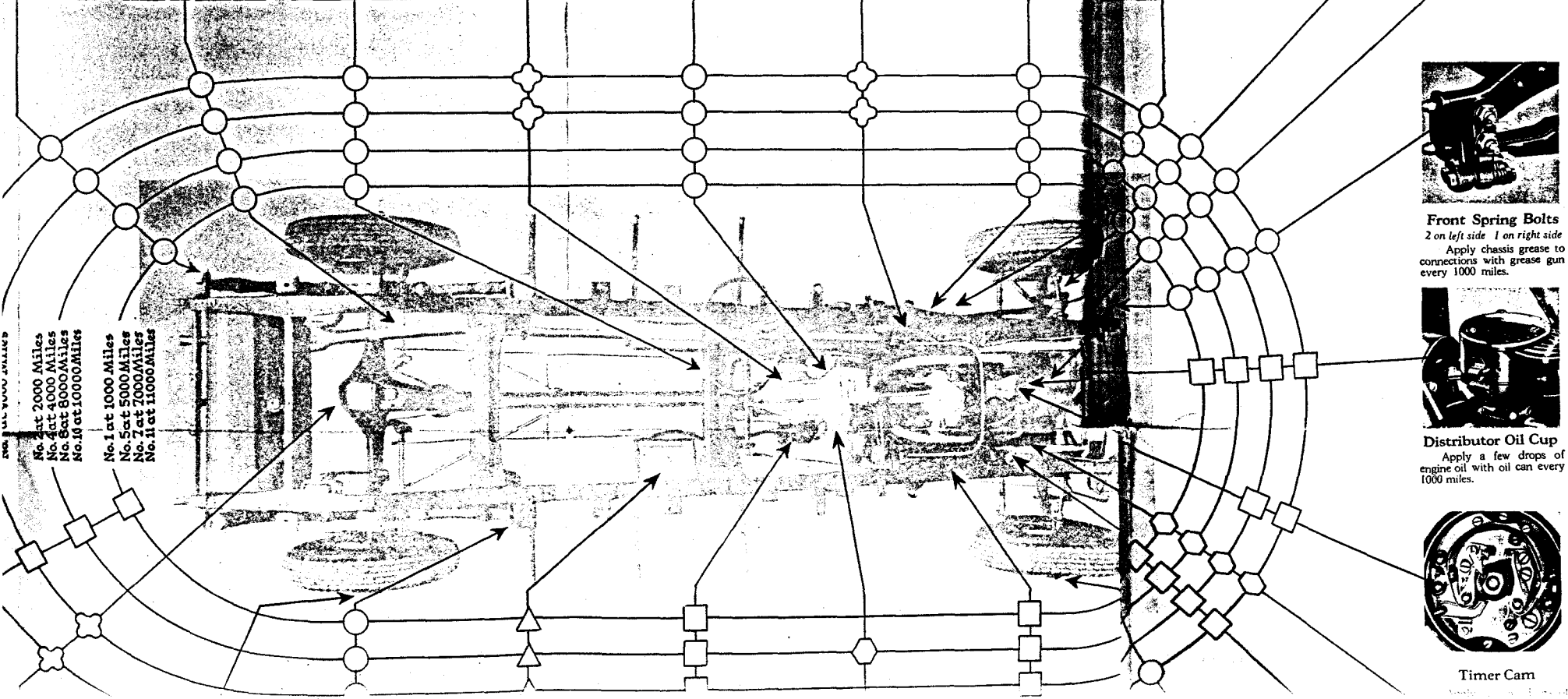
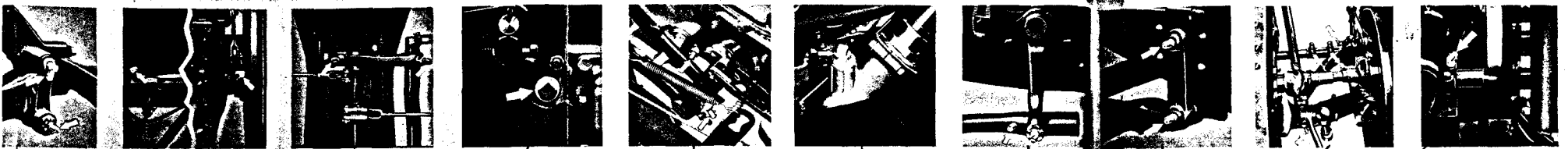
No. 1 at 1000 Miles
No. 5 at 5000 Miles
No. 7 at 7000 Miles
No. 11 at 11000 Miles



ALL LUBRICATION CHART

Do not wait for schedule lubrications before adding engine oil. The oil level should be checked every 100 to 150 miles and oil added before the indicator ball drops to "Fill". This is especially important on cars driven at high speeds.

- Shackles of Rear Springs**
2 each side
Apply chassis grease to connections with grease gun every 1000 miles.
- Brake Shafts on Axle**
2 each side
Apply chassis grease to connections with grease gun every 1000 miles.
- Brake Shafts Under Cross-Member**
2 each side
Apply chassis grease to connections with grease gun every 1000 miles.
- Transmission**
Add gear lubricant to bring level up to filler hole every 3000 miles. See special instructions for cold weather.
- Clutch Pedal and Release Fork**
2 as shown
Apply chassis grease to connections with grease gun every 1000 miles.
- Steering Gear**
Add gear lubricant to bring level up to filler hole every 3000 miles.
- Steering Connecting Rod**
Apply chassis grease connection with grease gun every 1000 miles.
- Rear Shackles of Front Springs**
2 each side
Apply chassis grease to connections with grease gun every 1000 miles.
- Steering Connections**
5 on left side
4 on right side
Apply chassis grease to connections with grease gun every 1000 miles.
- Front Engine Support**
Apply chassis grease to connection with grease gun every 1000 miles.



NO. 1 at 1000 Miles
NO. 5 at 5000 Miles
NO. 7 at 7000 Miles
NO. 11 at 11000 Miles
NO. 1 at 2000 Miles
NO. 4 at 4000 Miles
NO. 8 at 8000 Miles
NO. 10 at 10000 Miles



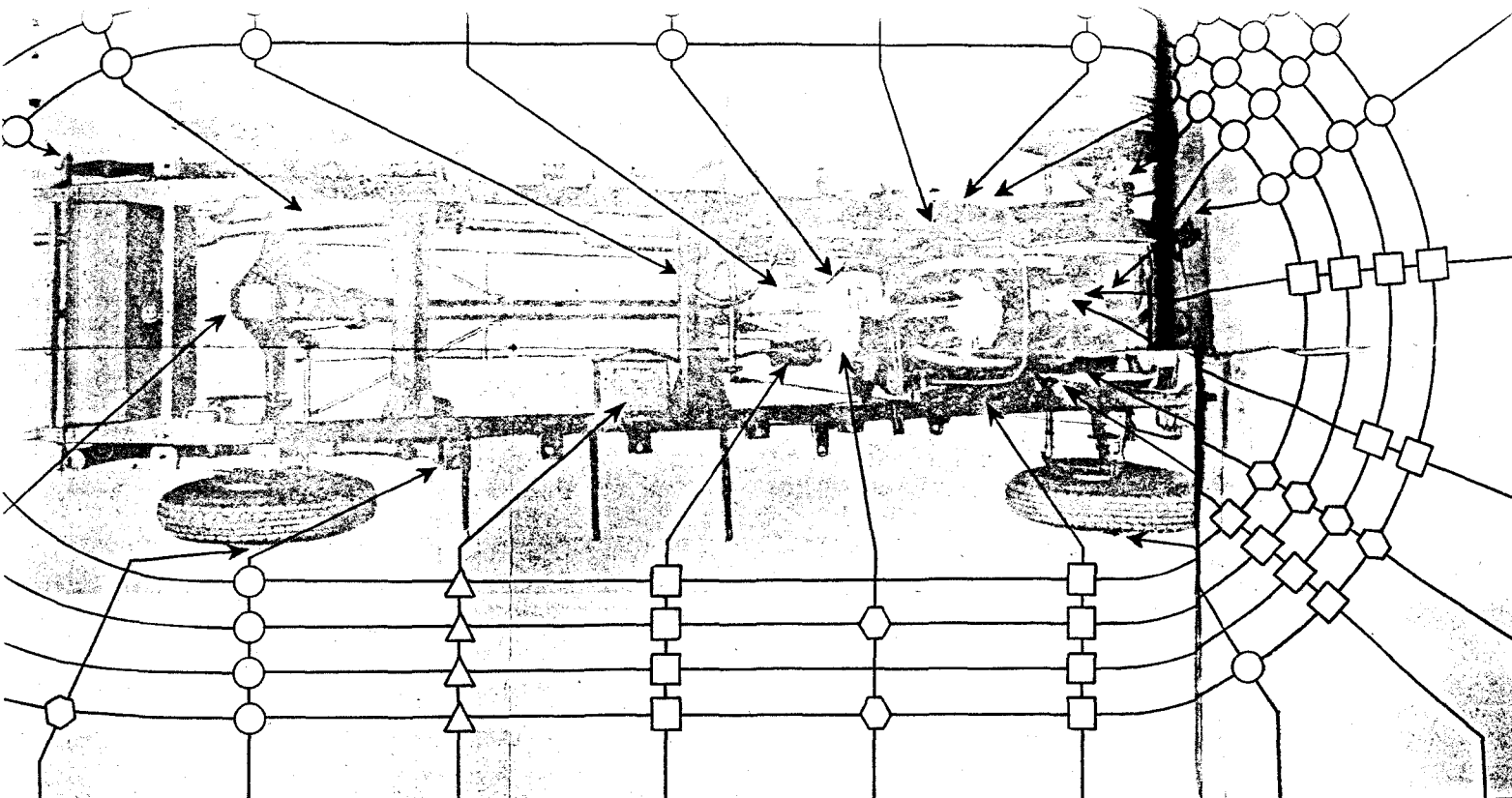
Front Spring Bolts
2 on left side 1 on right side
Apply chassis grease to connections with grease gun every 1000 miles.



Distributor Oil Cup
Apply a few drops of engine oil with oil can every 1000 miles.



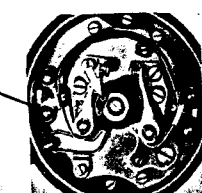
Timer Cam



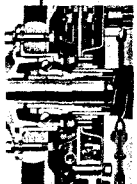
Front Spring Bolts
 2 on left side 1 on right side
 Apply chassis grease to connections with grease gun every 1000 miles.



Distributor Oil Cup
 Apply a few drops of engine oil with oil can every 1000 miles.



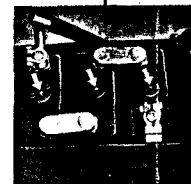
Timer Cam
 Apply a few drops of light oil to hole in cam every 1000 miles. Distributor head and rotor must be removed to reach oil hole.



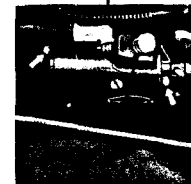
Wheel Bearings
 11 four wheels
 Lubricate and repack with wheel bearing grease every 1000 miles. This work should be done only by a thoroughly trained mechanic.



Front Shackles of Rear Springs
 2 each side
 Apply chassis grease to connections with grease gun every 1000 miles.



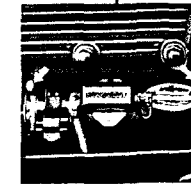
Storage Battery
 Add distilled water to bring level up to bottom of filling tubes. In warm weather, check level every 500 miles or every two weeks.



Starter Oil Cups
 Apply a few drops of engine oil with oil can every 1000 miles.



Clutch Release Bearing
 Fill grease cup with wheel bearing grease and turn down a few turns every 2000 miles. Lift up right side of hood to reach grease cup.



Generator Oil Cups
 2 as shown
 Apply a few drops of engine oil with oil can every 1000 miles.



Brake Cam Bearings
 One in each brake
 Every 6000 miles, remove the screw plugs shown and substitute an Alemite fitting. Apply chassis grease sparingly and wipe off any excess lubricant.
 Perform this same operation on the trunnion bearings in the front brakes. The plugs in the trunnions are accessible after lifting up the long brake shoe as shown.



Engine Oil Filler
 Check oil level every 100 to 150 miles and add oil as necessary. Drain and replace engine oil every 2000 miles.



Water Pump
 Turn down and refill grease cup with cup grease every 1000 miles.

Chassis Grease = ○ Gear Lubricant = ◈ Wheel Bearing Grease = ⬡ Distilled Water = △

Use only lubricants approved by Cadillac engineers. Consult your distributor or dealer.
CAUTION: Never run the engine in a small closed garage. Open garage door before starting the engine.



Accelerator Rocker Shaft

Apply a few drops of engine oil to the points indicated every 1000 miles.

It is a good plan to apply a few drops of oil to the brake clevis pins at the same time.



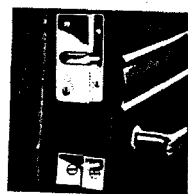
Starter Pedal Rocker Shaft

Apply a few drops of engine oil to the points indicated every 1000 miles.



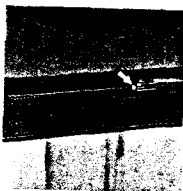
Door Locks and Wedges

Apply a small amount of vaseline to the door strikers and wedges every 1000 miles.



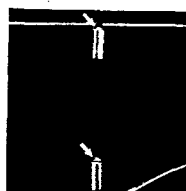
Door Striker Plates

Apply a small amount of vaseline to the door striker plates and wedge plates on the body every 1000 miles.



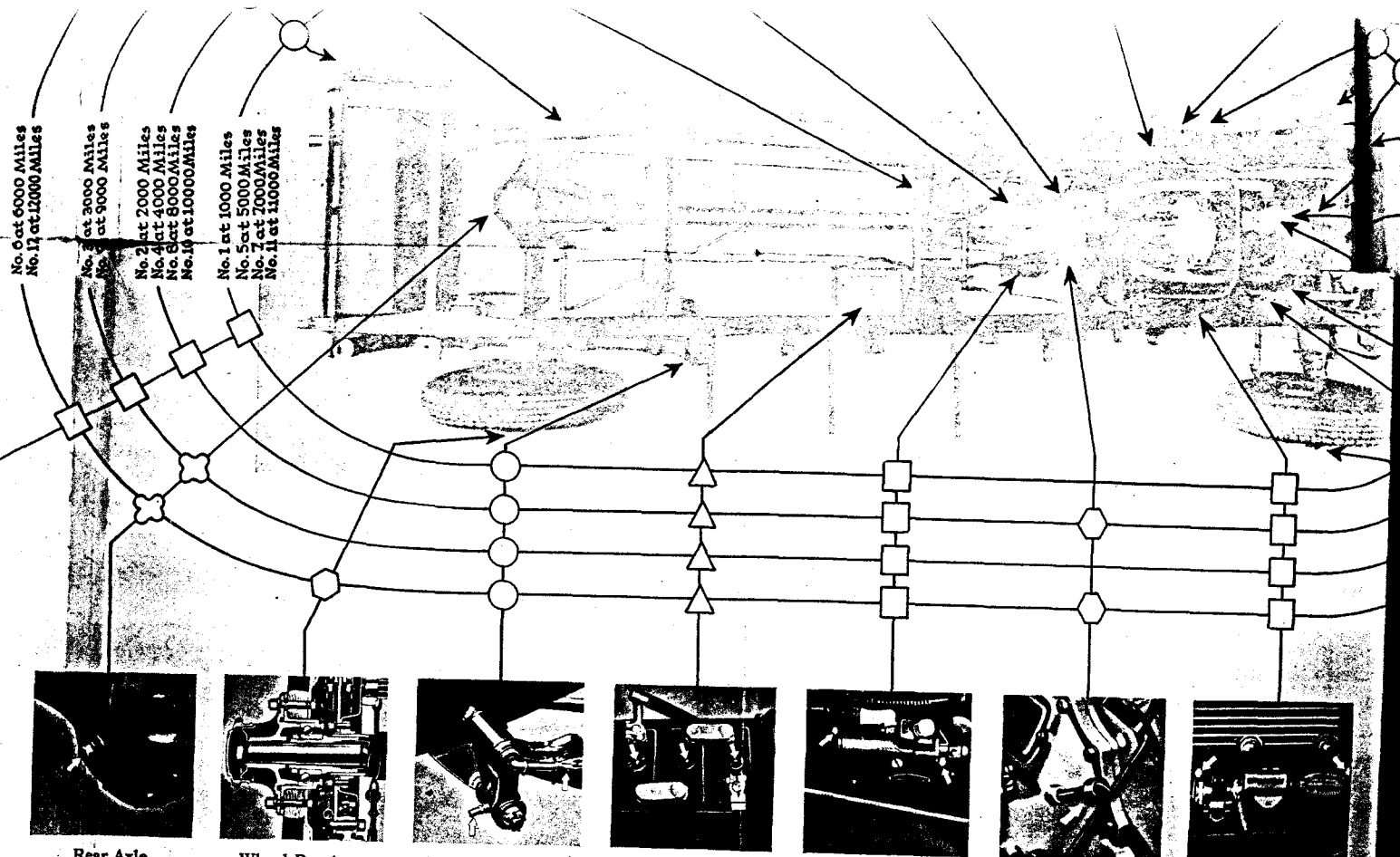
Door Checks

Apply a small amount of grease to the pin in the door checks at the top of each door every 1000 miles.



Door Hinges

Apply a few drops of oil to the door hinges every 1000 miles.



No. 6 at 6000 Miles
No. 11 at 12000 Miles

No. 3 at 3000 Miles
No. 4 at 4000 Miles

No. 2 at 2000 Miles
No. 8 at 8000 Miles

No. 10 at 10000 Miles

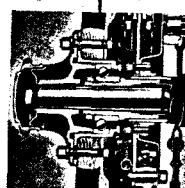
No. 1 at 1000 Miles
No. 5 at 5000 Miles

No. 7 at 7000 Miles
No. 11 at 11000 Miles



Rear Axle

Add gear lubricant to bring level up to filler hole every 3000 miles. See special instructions for cold weather.



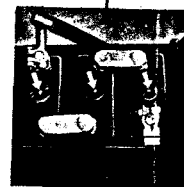
Wheel Bearings

All four wheels
Clean and repack with wheel bearing grease every 6000 miles. This work should be done only by someone thoroughly familiar with wheel bearing work.



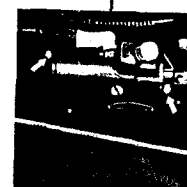
Front Shackles of Rear Springs

2 each side
Apply chassis grease to connections with grease gun every 1000 miles.



Storage Battery

Add distilled water to bring level up to bottom of filling tubes. In warm weather, check level every 500 miles or every two weeks.



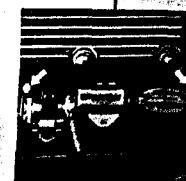
Starter Oil Cups

Apply a few drops of engine oil with oil can every 1000 miles.



Clutch Release Bearing

Fill grease cup with wheel bearing grease and turn down a few turns every 2000 miles. Lift up right side of hood to reach grease cup.



Generator Oil Cup

Apply engine oil with oil can every 1000 miles.

Engine Oil = □

Chassis Grease = ○

Gear Lubricant = ◇

Wheel Bearing Grease = ⊙

Use only lubricants approved by Cadillac engineers. Consult your distributor or dealer.
CAUTION: Never run the engine in a small closed garage. Open garage door before starting the engine.

CADILLAC V-16—Cont'd

	List	Delivered
4101-A 5 Passenger Club Sedan.....	5950.00	<u>4165</u>
4101-B 5 Passenger Club Sedan.....	6950.00	<u>4865</u>
4101-C 5 Passenger Sedan.....	5950.00	<u>4165</u>
4130 5 Passenger Imperial (opera seats).....	6300.00	<u>4410</u>
4130-B 5 Passenger Sedan.....	6950.00	<u>4865</u>
4130-C 5 Passenger Imperial (opera seats).....	7300.00	<u>5110</u>
4135-B 5 Passenger Sedan Cabriolet... 6125.00		<u>4287.50</u>
4135-C 5 Passenger Imperial Cabriolet (opera seats)..... 6350.00		<u>4445</u>
4155-B 5 Passenger Sedan Cabriolet... 7125.00		<u>4997.50</u>
4155-C 5 Passenger Imperial Cabriolet (opera seats)..... 7350.00		<u>5145</u>
4375-B 7 Passenger Sedan (FF aux. seats)..... 6225.00		<u>4357.50</u>
4375-C 7 Passenger Imperial Sedan (FF aux. seats)..... 6525.00		<u>4567.50</u>
4175-B 7 Passenger Sedan (FF aux. seats)..... 7225.00		<u>5057.50</u>
4175-C 7 Passenger Imperial Sedan (FF aux. seats)..... 7525.00		<u>5267.50</u>
4312 Town Cabriolet (opera seats). 7000.00		<u>4900</u>
4212 Town Cabriolet (opera seats). 8750.00		<u>6125</u>
4320 Town Cabriolet (quarter windows)—(FF aux. seats)..... 7150.00		<u>5005</u>
4220 Town Cabriolet (quarter windows)—(FF aux. seats)..... 8750.00		<u>6125</u>
4325 Town Cabriolet (full leather quarters)—(FF aux. seats)..... 7150.00		<u>5005</u>
4225 Town Cabriolet (full leather quarters)—(FF aux. seats)..... 8750.00		<u>6125</u>
4391 Limousine Brougham (FF aux. seats)..... 7150.00		<u>5005</u>
4291 Limousine Brougham (FF aux. seats)..... 8750.00		<u>6125</u>
4264 Town Brougham (opera seats) 9200.00		<u>6440</u>
4264-B Town Brougham (special cane work)..... 9700.00		<u>6740</u>
Chassis.....	4800	<u>3360</u>
Extras		
5 Wire wheels.....	49.00	\$ 70.00
6 Wire wheels, fender wells, 2 spare tires, and trunk rack.....	147.00	210.00
5 Demountable wood wheels.....	35.00	50.00
6 Demountable wood wheels, fender wells, 2 spare tires and trunk rack.....	135.00	190.00
5 Disc wheels.....	35.00	50.00
6 Disc wheels, fender wells, 2 spare tires and trunk rack.....	135.00	190.00

PRICE LIST

Cadillac V-8
La Salle V-8
Cadillac V-16

Fisher and Fleetwood Custom Bodies



January 1, 1930

Prices Subject to Change Without Notice

CADILLAC MOTOR CAR COMPANY

Detroit, Michigan, U. S. A.

Line
it Diff

26.85
35 -

CADILLAC V-8

Fisher Custom (140" Wheelbase)

Style	List	Delivered
2 Passenger Coupe.....	\$3295.00	<u>2306.50</u>
2 Passenger Convertible Coupe.....	3595.00	<u>2516.50</u>
5 Passenger Coupe.....	3595.00	<u>2516.50</u>
5 Passenger Town Sedan.....	3495.00	<u>2446.50</u>
5 Passenger Sedan.....	3695.00	<u>2586.50</u>
7 Passenger Sedan (FF aux. seats)....	3795.00	<u>2656.50</u>
7 Passenger Imperial (FF aux. seats)...	3995.00	<u>2796.50</u>
Chassis 140" Wheelbase.....	2800.00	<u>1960 -</u>
Chassis 152" Wheelbase.....	2900.00	<u>2030 -</u>

Fleetwood Custom (140" Wheelbase)

Style No.		List	Delivered
3902	2 Passenger Roadster Fleet-downs.....	\$3450.00	<u>2415 -</u>
3981	5 Passenger Sedanette Cabriolet Fleetwind.....	4500.00	<u>3150 -</u>
3982	5 Passenger Sedanette Fleetwind.....	4595.00	<u>3216.50</u>
3980	5 Passenger All-Weather Phaeton Fleetway.....	4700.00	<u>3290 -</u>
3930-8	5 Passenger Sedan Fleetdene...	4195.00	<u>2936.50</u>
3930	5 Passenger Imperial Fleetdene	4395.00	<u>3076.50</u>
3955-8	5 Passenger Sedan Cabriolet Fleetmere.....	4245.00	<u>2971.50</u>
3955	5 Passenger Imperial Cabriolet Fleetmere.....	4445.00	<u>3111.50</u>
3975-8	7 Passenger Sedan Fleetdale (FF aux. seats).....	4295.00	<u>3006.50</u>
3975	7 Passenger Imperial Fleetdale (FF aux. seats).....	4595.00	<u>3216.50</u>
3912	Town Cabriolet Fleetwick (opera seats).....	4995.00	<u>3496.50</u>
3920	Town Cabriolet Fleetmont (FF aux. seats—quarter window).....	5145.00	<u>3601.50</u>
3925	Town Cabriolet Fleetcrest (FF aux. seats, full rear quarter)	5145.00	<u>3601.50</u>
91	Limousine Brougham Fleetbourne (FF aux. seats).....	5145.00	<u>3601.50</u>

Extras

5 Wire wheels.....	49 -	\$ 70.00
6 Wire wheels, fender wells, 2 spare tires and trunk rack.....	149 -	210.00
5 Demountable wood wheels.....	35 -	50.00
6 Demountable wood wheels, fender wells, 2 spare tires and trunk rack.....	133 -	190.00
5 Disc wheels.....	35 -	50.00
6 Disc wheels, fender wells, 2 spare tires and trunk rack.....	133 -	190.00
4 Not wood wheels.....	7 -	10 -

2 Brake Drums..... 7 -

128 11.1 175 list

7.00 X 18 Tire
6.50 X 19 "

26.40
25.25

LA SALLE V-8

Fisher Custom (134" Wheelbase)

Style	List	Delivered
2 Passenger Coupe.....	\$2490.00	<u>1743 -</u>
2 Passenger Convertible Coupe.....	2590.00	<u>1813 -</u>
5 Passenger Coupe.....	2590.00	<u>1813 -</u>
5 Passenger Sedan.....	2565.00	<u>1795.50</u>
5 Passenger Town Sedan.....	2590.00	<u>1813 -</u>
7 Passenger Sedan (FF aux. seats)....	2775.00	<u>1942.50</u>
7 Passenger Imperial (FF aux. seats)...	2925.00	<u>2047.50</u>
Chassis 134" Wheelbase.....	2200.00	<u>1540 -</u>

Fleetwood Custom (134" Wheelbase)

Style No.		List	Delivered
4002	2 Passenger Roadster Fleet-cliffe.....	\$2450.00	<u>1715 -</u>
4060	5 Passenger Phaeton Fleetshire	2385.00	<u>1669.50</u>
4057	7 Passenger Touring Fleetlands (FF aux. seats).....	2525.00	<u>1767.50</u>
4081	5 Passenger Sedanette Cabriolet Fleetwind.....	3725.00	<u>2607.50</u>
4082	5 Passenger Sedanette Fleetwind.....	3825.00	<u>2677.50</u>
4080	5 Passenger All-Weather Phaeton Fleetway.....	3995.00	<u>2796.50</u>

Extras

5 Wire wheels.....	42 -	\$ 60.00
6 Wire wheels, fender wells, 2 spare tires and trunk rack.....	133 -	190.00
5 Demountable wood wheels.....	35 -	50.00
6 Demountable wood wheels, fender wells, 2 spare tires and trunk rack.....	133 -	190.00
5 Disc wheels.....	35 -	50.00
6 Disc wheels, fender wells, 2 spare tires and trunk rack.....	133 -	190.00

5 6.00m Plated wheels..... 105 -
" " Shuttles..... 45.50
" " Shuttles..... 31.50

CADILLAC V-16

Fleetwood Custom (148" Wheelbase)

Style No.		List	Delivered
4302	2 Passenger Roadster.....	\$5350.00	<u>3745 -</u>
4260	5 Passenger Phaeton.....	6150.00	<u>4350 -</u>
4380	All Weather Phaeton.....	6650.00	<u>4655 -</u>
4280	All Weather Phaeton.....	7350.00	<u>5145 -</u>
4376	2 Passenger Coupe.....	5800.00	<u>4060 -</u>
4276	2 Passenger Coupe.....	6850.00	<u>4795 -</u>
4335	2 Passenger Convertible Coupe	5900.00	<u>4130 -</u>
4235	2 Passenger Convertible Coupe	6900.00	<u>4830 -</u>

CADILLAC V-8

Fisher Custom (140" Wheelbase)

Style	List	Delivered
2 Passenger Coupe.....	\$3295.00	_____
2 Passenger Convertible Coupe.....	3595.00	_____
5 Passenger Coupe.....	3595.00	_____
5 Passenger Town Sedan.....	3495.00	_____
5 Passenger Sedan.....	3695.00	_____
7 Passenger Sedan (FF aux. seats)....	3795.00	_____
7 Passenger Imperial (FF aux. seats)...	3995.00	_____
Chassis 140" Wheelbase.....	2800.00	_____
Chassis 152" Wheelbase.....	2900.00	_____

Fleetwood Custom (140" Wheelbase)

Style No.	List	Delivered
3902 2 Passenger Roadster Fleet-downs.....	\$3450.00	_____
3981 5 Passenger Sedanette Cabriolet Fleetwind.....	4500.00	_____
3982 5 Passenger Sedanette Fleetwind.....	4595.00	_____
3980 5 Passenger All-Weather Phaeton Fleetway.....	4700.00	_____
3930-8 5 Passenger Sedan Fleetdene...	4195.00	_____
3930 5 Passenger Imperial Fleetdene	4395.00	_____
3955-8 5 Passenger Sedan Cabriolet Fleetmere.....	4245.00	_____
3955 5 Passenger Imperial Cabriolet Fleetmere.....	4445.00	_____
3975-8 7 Passenger Sedan Fleetdale (FF aux. seats).....	4295.00	_____
3975 7 Passenger Imperial Fleetdale (FF aux. seats).....	4595.00	_____
3912 Town Cabriolet Fleetwick (opera seats).....	4995.00	_____
3920 Town Cabriolet Fleetmont (FF aux. seats—quarter window).....	5145.00	_____
3925 Town Cabriolet Fleetrest (FF aux. seats, full rear quarter)	5145.00	_____
3991 Limousine Brougham Fleetbourne (FF aux. seats).....	5145.00	_____

Extras

5 Wire wheels.....	\$ 70.00
6 Wire wheels, fender wells, 2 spare tires and trunk rack.....	210.00
5 Demountable wood wheels.....	50.00
6 Demountable wood wheels, fender wells, 2 spare tires and trunk rack.....	190.00
5 Disc wheels.....	50.00
6 Disc wheels, fender wells, 2 spare tires and trunk rack.....	190.00

LA SALLE V-8

Fisher Custom (134" Wheelbase)

Style	List	Delivered
2 Passenger Coupe.....	\$2490.00	_____
2 Passenger Convertible Coupe.....	2590.00	_____
5 Passenger Coupe.....	2590.00	_____
5 Passenger Sedan.....	2565.00	_____
5 Passenger Town Sedan.....	2590.00	_____
7 Passenger Sedan (FF aux. seats)....	2775.00	_____
7 Passenger Imperial (FF aux. seats)...	2925.00	_____
Chassis 134" Wheelbase.....	2200.00	_____

Fleetwood Custom (134" Wheelbase)

Style No.	List	Delivered
4002 2 Passenger Roadster Fleet-cliffe.....	\$2450.00	_____
4060 5 Passenger Phaeton Fleetshire	2385.00	_____
4057 7 Passenger Touring Fleetlands (FF aux. seats).....	2525.00	_____
4081 5 Passenger Sedanette Cabriolet Fleetwind.....	3725.00	_____
4082 5 Passenger Sedanette Fleetwind.....	3825.00	_____
4080 5 Passenger All-Weather Phaeton Fleetway.....	3995.00	_____

Extras

5 Wire wheels.....	\$ 60.00
6 Wire wheels, fender wells, 2 spare tires and trunk rack.....	190.00
5 Demountable wood wheels.....	50.00
6 Demountable wood wheels, fender wells, 2 spare tires and trunk rack.....	190.00
5 Disc wheels.....	50.00
6 Disc wheels, fender wells, 2 spare tires and trunk rack.....	190.00

CADILLAC V-16

Fleetwood Custom (148" Wheelbase)

Style No.	List	Delivered
4302 2 Passenger Roadster.....	\$5350.00	✓_____
4260 5 Passenger Phaeton.....	6150.00	_____
4380 All-Weather Phaeton.....	6650.00	_____
4376 2 Passenger Coupe.....	5800.00	_____
4276 2 Passenger Coupe.....	6850.00	✓_____
4335 2 Passenger Convertible Coupe	5900.00	_____
4235 2 Passenger Convertible Coupe	6900.00	_____
4381 5 Passenger Coupe.....	5950.00	✓_____

CADILLAC V-16—Cont'd

Style No.	List	Delivered
4361-8 5 Passenger Club Sedan.....	\$5950.00	✓
4161-8 5 Passenger Club Sedan.....	6950.00	✓
4330-8 5 Passenger Sedan.....	5950.00	✓
4330 5 Passenger Imperial (opera seats).....	6300.00	✓
4130-8 5 Passenger Sedan.....	6950.00	✓
4130 5 Passenger Imperial (opera seats).....	7300.00	✓
4355-8 5 Passenger Sedan Cabriolet...	6125.00	✓
4355 5 Passenger Imperial Cabriolet (opera seats).....	6350.00	✓
4155-8 5 Passenger Sedan Cabriolet...	7125.00	✓
4155 5 Passenger Imperial Cabriolet (opera seats).....	7350.00	✓
4375-8 7 Passenger Sedan (FF aux. seats).....	6225.00	✓
4375 7 Passenger Imperial Sedan (FF aux. seats).....	6525.00	✓
4175-8 7 Passenger Sedan (FF aux. seats).....	7225.00	✓
4175 7 Passenger Imperial Sedan (FF aux. seats).....	7525.00	✓
4312 Town Cabriolet (opera seats).....	7000.00	✓
4212 Town Cabriolet (opera seats).....	8750.00	✓
4320 Town Cabriolet (quarter windows)—(FF aux. seats).....	7150.00	✓
4220 Town Cabriolet (quarter windows)—(FF aux. seats).....	8750.00	✓
4325 Town Cabriolet (full leather quarters)—(FF aux. seats).....	7150.00	✓
4225 Town Cabriolet (full leather quarters)—(FF aux. seats).....	8750.00	✓
4391 Limousine Brougham (FF aux. seats).....	7150.00	✓
4291 Limousine Brougham (FF aux. seats).....	8750.00	✓
4264 Town Brougham (opera seats).....	9200.00	✓
4264-B Town Brougham (special cane work).....	9700.00	✓
Chassis 148" wheelbase.....	4800.00	✓

2 mil Edition

PRICE LIST

◆
Cadillac V-8
La Salle V-8
Cadillac V-16
◆

Fisher and Fleetwood Custom Bodies



January 1, 1930

Prices Subject to Change Without Notice

CADILLAC MOTOR CAR COMPANY

Detroit, Michigan, U. S. A.

PRINTED IN U.S.A.

CADILLAC V-16—Cont'd

Style No.	List	Delivered
4361-S 5 Passenger Club Sedan.....	\$5950.00	✓
4161-S 5 Passenger Club Sedan.....	6950.00	✓
4330-S 5 Passenger Sedan.....	5950.00	✓
4330 5 Passenger Imperial (opera seats).....	6300.00	✓
4130-S 5 Passenger Sedan.....	6950.00	✓
4130 5 Passenger Imperial (opera seats).....	7300.00	✓
4355-S 5 Passenger Sedan Cabriolet...	6125.00	✓
4355 5 Passenger Imperial Cabriolet (opera seats).....	6350.00	✓
4155-S 5 Passenger Sedan Cabriolet...	7125.00	✓
4155 5 Passenger Imperial Cabriolet (opera seats).....	7350.00	✓
4375-S 7 Passenger Sedan (FF aux. seats).....	6225.00	✓
4375 7 Passenger Imperial Sedan (FF aux. seats).....	6525.00	✓
4175-S 7 Passenger Sedan (FF aux. seats).....	7225.00	✓
4175 7 Passenger Imperial Sedan (FF aux. seats).....	7525.00	✓
4312 Town Cabriolet (opera seats).....	7000.00	✓
4212 Town Cabriolet (opera seats).....	8750.00	✓
4320 Town Cabriolet (quarter windows)—(FF aux. seats).....	7150.00	—
4220 Town Cabriolet (quarter windows)—(FF aux. seats).....	8750.00	✓
4325 Town Cabriolet (full leather quarters)—(FF aux. seats).....	7150.00	—
4225 Town Cabriolet (full leather quarters)—(FF aux. seats).....	8750.00	✓
4391 Limousine Brougham (FF aux. seats).....	7150.00	—
4291 Limousine Brougham (FF aux. seats).....	8750.00	✓
4264 Town Brougham (opera seats).....	9200.00	✓
4264-B Town Brougham (special cane work).....	9700.00	✓
Chassis 148" wheelbase.....	4800.00	—

2 mil Edition

PRICE LIST

◆
Cadillac V-8
La Salle V-8
Cadillac V-16

◆
Fisher and Fleetwood Custom Bodies



January 1, 1930

Prices Subject to Change Without Notice

CADILLAC MOTOR CAR COMPANY
Detroit, Michigan, U. S. A.

PRINTED IN U.S.A.

CADILLAC V-8

Fisher Custom (140" Wheelbase)

Style	List	Delivered
2 Passenger Coupe.....	\$3295.00	_____
2 Passenger Convertible Coupe.....	3595.00	_____
5 Passenger Coupe.....	3595.00	_____
5 Passenger Town Sedan.....	3495.00	_____
5 Passenger Sedan.....	3695.00	_____
7 Passenger Sedan (FF aux. seats)....	3795.00	_____
7 Passenger Imperial (FF aux. seats)..<	3995.00	_____
Chassis 140" Wheelbase.....	2800.00	_____
Chassis 152" Wheelbase.....	2900.00	_____

Fleetwood Custom (140" Wheelbase)

Style No.	List	Delivered
3902 2 Passenger Roadster Fleet-downs.....	\$3450.00	_____
3981 5 Passenger Sedanette Cabriolet Fleetwind.....	4500.00	_____
3982 5 Passenger Sedanette Fleetwind.....	4595.00	_____
3980 5 Passenger All-Weather Phaeton Fleetway.....	4700.00	_____
3930-8 5 Passenger Sedan Fleetdene...	4195.00	_____
3930 5 Passenger Imperial Fleetdene	4395.00	_____
3955-8 5 Passenger Sedan Cabriolet Fleetmere.....	4245.00	_____
3955 5 Passenger Imperial Cabriolet Fleetmere.....	4445.00	_____
3975-8 7 Passenger Sedan Fleetdale (FF aux. seats).....	4295.00	_____
3975 7 Passenger Imperial Fleetdale (FF aux. seats).....	4595.00	_____
3912 Town Cabriolet Fleetwick (opera seats).....	4995.00	_____
3920 Town Cabriolet Fleetmont (FF aux. seats—quarter window).....	5145.00	_____
3925 Town Cabriolet Fleetcrest (FF aux. seats, full rear quarter)	5145.00	_____
3991 Limousine Brougham Fleetbourne (FF aux. seats).....	5145.00	_____

Extras

5 Wire wheels.....	\$ 70.00
6 Wire wheels, fender wells, 2 spare tires and trunk rack.....	210.00
5 Demountable wood wheels.....	50.00
6 Demountable wood wheels, fender wells, 2 spare tires and trunk rack.....	190.00
5 Disc wheels.....	50.00
6 Disc wheels, fender wells, 2 spare tires and trunk rack.....	190.00

LA SALLE V-8

Fisher Custom (134" Wheelbase)

Style	List	Delivered
2 Passenger Coupe.....	\$2490.00	_____
2 Passenger Convertible Coupe.....	2590.00	_____
5 Passenger Coupe.....	2590.00	_____
5 Passenger Sedan.....	2565.00	_____
5 Passenger Town Sedan.....	2590.00	_____
7 Passenger Sedan (FF aux. seats)....	2775.00	_____
7 Passenger Imperial (FF aux. seats)...	2925.00	_____
Chassis 134" Wheelbase.....	2200.00	_____

Fleetwood Custom (134" Wheelbase)

Style No.	List	Delivered
4002 2 Passenger Roadster Fleetcliffe.....	\$2450.00	_____
4060 5 Passenger Phaeton Fleetshire	2385.00	_____
4057 7 Passenger Touring Fleetlands (FF aux. seats).....	2525.00	_____
4081 5 Passenger Sedanette Cabriolet Fleetwind.....	3725.00	_____
4082 5 Passenger Sedanette Fleetwind.....	3825.00	_____
4080 5 Passenger All-Weather Phaeton Fleetway.....	3995.00	_____

Extras

5 Wire wheels.....	\$ 60.00
6 Wire wheels, fender wells, 2 spare tires and trunk rack.....	190.00
5 Demountable wood wheels.....	50.00
6 Demountable wood wheels, fender wells, 2 spare tires and trunk rack.....	190.00
5 Disc wheels.....	50.00
6 Disc wheels, fender wells, 2 spare tires and trunk rack.....	190.00

CADILLAC V-16

Fleetwood Custom (148" Wheelbase)

Style No.	List	Delivered
4302 2 Passenger Roadster.....	\$5350.00	✓_____
4260 5 Passenger Phaeton.....	6150.00	_____
4380 All-Weather Phaeton.....	6650.00	_____
4376 2 Passenger Coupe.....	5800.00	_____
4276 2 Passenger Coupe.....	6850.00	✓_____
4335 2 Passenger Convertible Coupe	5900.00	_____
4235 2 Passenger Convertible Coupe	6900.00	✓_____
4381 5 Passenger Coupe.....	5950.00	✓_____

CADILLAC V-8

Fisher Custom (140" Wheelbase)

Style	List	Delivered
2 Passenger Coupe.....	\$3295.00	<u>2306.50</u>
2 Passenger Convertible Coupe.....	3595.00	<u>2516.50</u>
5 Passenger Coupe.....	3595.00	<u>2516.50</u>
5 Passenger Town Sedan.....	3495.00	<u>2446.50</u>
5 Passenger Sedan.....	3695.00	<u>2586.50</u>
7 Passenger Sedan (FF aux. seats)....	3795.00	<u>2656.50</u>
7 Passenger Imperial (FF aux. seats)...	3995.00	<u>2796.50</u>
Chassis 140" Wheelbase.....	2800.00	<u>1960 -</u>
Chassis 152" Wheelbase.....	2900.00	<u>2030 -</u>

Fleetwood Custom (140" Wheelbase)

Style No.	List	Delivered
3902 2 Passenger Roadster Fleet-downs.....	\$3450.00	<u>2415 -</u>
3981 5 Passenger Sedanette Cabriolet Fleetwind.....	4500.00	<u>3150 -</u>
3982 5 Passenger Sedanette Fleetwind.....	4595.00	<u>3216.50</u>
3980 5 Passenger All-Weather Phaeton Fleetway.....	4700.00	<u>3290 -</u>
3930-8 5 Passenger Sedan Fleetdene...	4195.00	<u>2936.50</u>
3930 5 Passenger Imperial Fleetdene	4395.00	<u>3076.50</u>
3955-8 5 Passenger Sedan Cabriolet Fleetmere.....	4245.00	<u>2971.50</u>
3955 5 Passenger Imperial Cabriolet Fleetmere.....	4445.00	<u>3111.50</u>
3975-8 7 Passenger Sedan Fleetdale (FF aux. seats).....	4295.00	<u>3006.50</u>
3975 7 Passenger Imperial Fleetdale (FF aux. seats).....	4595.00	<u>3216.50</u>
3912 Town Cabriolet Fleetwick (opera seats).....	4995.00	<u>3496.50</u>
3920 Town Cabriolet Fleetmont (FF aux. seats—quarter window).....	5145.00	<u>3601.50</u>
3925 Town Cabriolet Fleetcrest (FF aux. seats, full rear quarter)	5145.00	<u>3601.50</u>
91 Limousine Brougham Fleetbourne (FF aux. seats).....	5145.00	<u>3601.50</u>

Extras

5 Wire wheels.....	49 -	\$ 70.00
6 Wire wheels, fender wells, 2 spare tires and trunk rack.....	133 -	210.00
5 Demountable wood wheels.....	35 -	50.00
6 Demountable wood wheels, fender wells, 2 spare tires and trunk rack.....	133 -	190.00
5 Disc wheels.....	35 -	50.00
6 Disc wheels, fender wells, 2 spare tires and trunk rack.....	133 -	190.00
4 Hot wood wheels.....	7 -	10 -

2 Brake Drums... 7 -
 12.128... 6 -
 175 list

1.00 X 18 tire 26.40
 1.50 X 19 " 25.25

LA SALLE V-8

Fisher Custom (134" Wheelbase)

Style	List	Delivered
2 Passenger Coupe.....	\$2490.00	<u>1743 -</u>
2 Passenger Convertible Coupe.....	2590.00	<u>1813 -</u>
5 Passenger Coupe.....	2590.00	<u>1813 -</u>
5 Passenger Sedan.....	2565.00	<u>1795.50</u>
5 Passenger Town Sedan.....	2590.00	<u>1813 -</u>
7 Passenger Sedan (FF aux. seats)....	2775.00	<u>1942.50</u>
7 Passenger Imperial (FF aux. seats)...	2925.00	<u>2047.50</u>
Chassis 134" Wheelbase.....	2200.00	<u>1540 -</u>

Fleetwood Custom (134" Wheelbase)

Style No.	List	Delivered
4002 2 Passenger Roadster Fleet-cliffe.....	\$2450.00	<u>1715 -</u>
4060 5 Passenger Phaeton Fleetshire	2385.00	<u>1669.50</u>
4057 7 Passenger Touring Fleetlands (FF aux. seats).....	2525.00	<u>1767.50</u>
4081 5 Passenger Sedanette Cabriolet Fleetwind.....	3725.00	<u>2607.50</u>
4082 5 Passenger Sedanette Fleetwind.....	3825.00	<u>2677.50</u>
4080 5 Passenger All-Weather Phaeton Fleetway.....	3995.00	<u>2796.50</u>

Extras

5 Wire wheels.....	42 -	\$ 60.00
6 Wire wheels, fender wells, 2 spare tires and trunk rack.....	133 -	190.00
5 Demountable wood wheels.....	35 -	50.00
6 Demountable wood wheels, fender wells, 2 spare tires and trunk rack.....	133 -	190.00
5 Disc wheels.....	35 -	50.00
6 Disc wheels, fender wells, 2 spare tires and trunk rack.....	133 -	190.00

5 Chrom Plated wheels... 105 -
 " " shillies... 45.50
 " " shillies... 31.50

CADILLAC V-16

Fleetwood Custom (148" Wheelbase)

Style No.	List	Delivered
4302 2 Passenger Roadster.....	\$5350.00	<u>3745 -</u>
4260 5 Passenger Phaeton.....	6150.00	<u>4350 -</u>
4380 All Weather Phaeton.....	6650.00	<u>4655 -</u>
4280 All Weather Phaeton.....	7350.00	<u>5145 -</u>
4376 2 Passenger Coupe.....	5800.00	<u>4060 -</u>
4276 2 Passenger Coupe.....	6850.00	<u>4795 -</u>
4335 2 Passenger Convertible Coupe	5900.00	<u>4130 -</u>
4235 2 Passenger Convertible Coupe	6900.00	<u>4830 -</u>

CADILLAC V-16—Cont'd

	List	Delivered
4100-8 5 Passenger Club Sedan	5950.00	<u>4165</u>
4100-8 5 Passenger Club Sedan	6950.00	<u>4965</u>
4100-8 5 Passenger Sedan	5950.00	<u>4165</u>
4100-8 5 Passenger Imperial (opera seats)	6300.00	<u>4410</u>
4100-8 5 Passenger Sedan	6950.00	<u>4965</u>
4100-8 5 Passenger Imperial (opera seats)	7300.00	<u>5110</u>
4135-8 5 Passenger Sedan Cabriolet	6125.00	<u>4287.50</u>
4135-8 5 Passenger Imperial Cabriolet (opera seats)	6350.00	<u>4445</u>
4155-8 5 Passenger Sedan Cabriolet	7125.00	<u>4987.50</u>
4155-8 5 Passenger Imperial Cabriolet (opera seats)	7350.00	<u>5145</u>
4375-8 7 Passenger Sedan (FF aux. seats)	6225.00	<u>4357.50</u>
4375-8 7 Passenger Imperial Sedan (FF aux. seats)	6525.00	<u>4567.50</u>
4175-8 7 Passenger Sedan (FF aux. seats)	7225.00	<u>5057.50</u>
4175-8 7 Passenger Imperial Sedan (FF aux. seats)	7525.00	<u>5267.50</u>
4212-8 Town Cabriolet (opera seats)	7000.00	<u>4900</u>
4212-8 Town Cabriolet (opera seats)	8750.00	<u>6125</u>
4220-8 Town Cabriolet (quarter windows) — (FF aux. seats)	7150.00	<u>5005</u>
4220-8 Town Cabriolet (quarter windows) — (FF aux. seats)	8750.00	<u>6125</u>
4225-8 Town Cabriolet (full leather quarters) — (FF aux. seats)	7150.00	<u>5005</u>
4225-8 Town Cabriolet (full leather quarters) — (FF aux. seats)	8750.00	<u>6125</u>
4391-8 Limousine Brougham (FF aux. seats)	7150.00	<u>5005</u>
4291-8 Limousine Brougham (FF aux. seats)	8750.00	<u>6125</u>
4264-8 Town Brougham (opera seats)	9200.00	<u>6440</u>
4264-B Town Brougham (special cane work)	9700.00	<u>6790</u>

Chassis

Extras

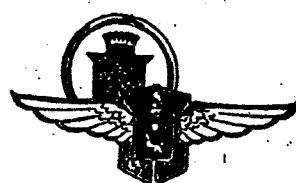
5 Wire wheels	49.00	\$ 70.00
6 Wire wheels, fender wells, 2 spare tires and trunk rack	147.00	210.00
5 Demountable wood wheels	35.00	50.00
6 Demountable wood wheels, fender wells, 2 spare tires and trunk rack	147.00	190.00
5 Wire wheels	35.00	50.00
6 Wire wheels, fender wells, 2 spare tires and trunk rack	147.00	190.00

December 1st price

PRICE LIST

Cadillac V-8
La Salle V-8
Cadillac V-16

Fisher and Fleetwood Custom Bodies



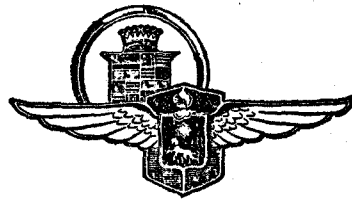
January 1, 1930

Prices Subject to Change Without Notice

CADILLAC MOTOR CAR COMPANY
Detroit, Michigan, U. S. A.

CADILLAC-LASALLE SHOP MANUAL

Adjustments, Repairs and Lubrication



Supplement

FOR

Cadillac 353—LaSalle 340

**Service Department
CADILLAC MOTOR CAR COMPANY
DETROIT**

Foreword

THE following pages contain complete specifications for Cadillac 353 and La Salle 340. They are supplementary to the pages covering the Cadillac 341-A and 341-B and La Salle 303 and 328. and should be inserted at the back of the present Shop Manual. For this reason the page numbering starts at 201 and the plates at 101.

Although the specifications given in these pages are complete, the illustrations are arranged primarily to show assemblies and adjustments that differ from the previous models.

CADILLAC MOTOR CAR COMPANY
Detroit, Michigan

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Cadillac Motor Car Company
Detroit

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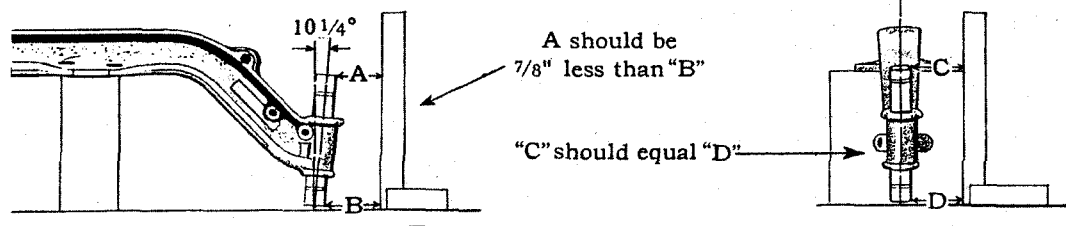
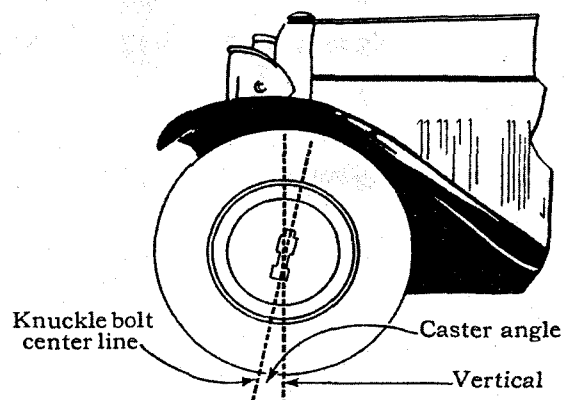
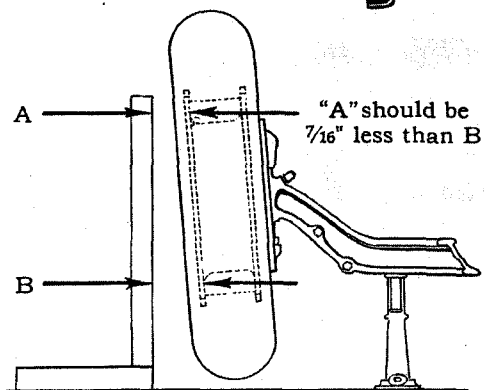
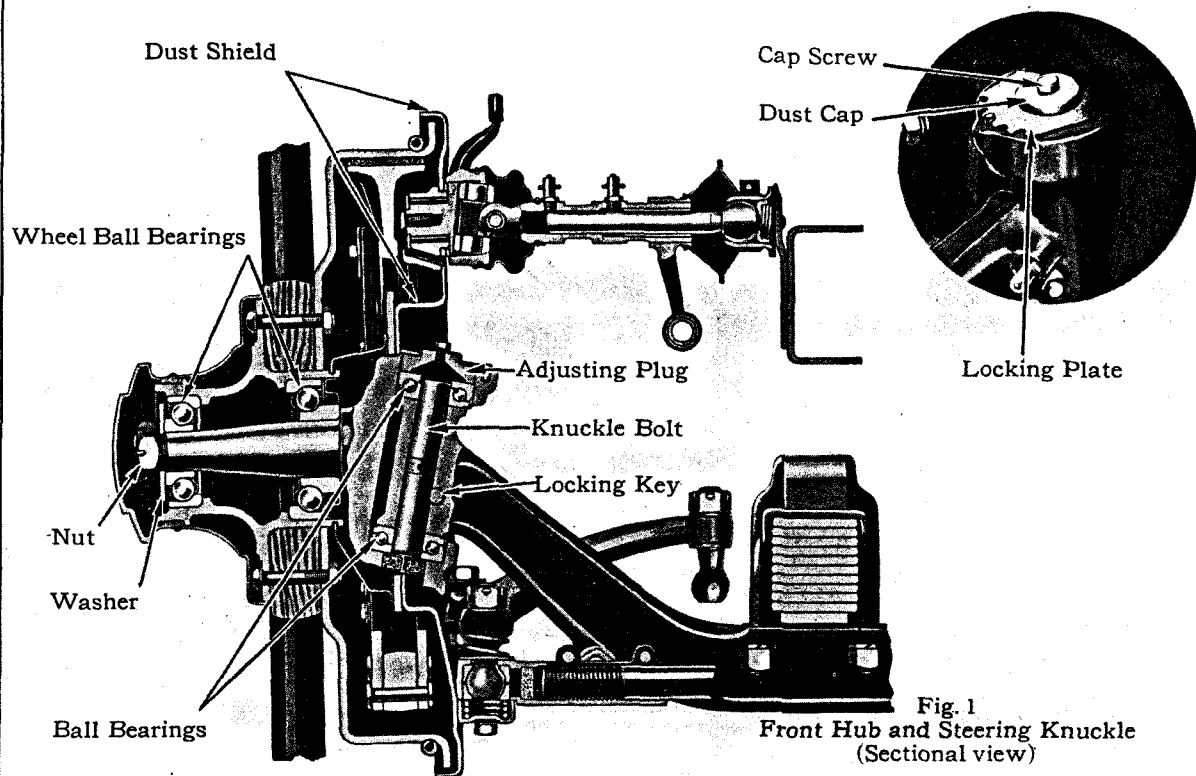
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Front Axle

Subject	Cad.	LaS.	Specifications	Remarks
Camber of front wheel (angle with vertical).....	353	340	$1\frac{1}{2}^{\circ}$	Plate 101. Fig. 2
Angle between steering knuckle bolt and vertical.....	353	340	$10\frac{1}{4}^{\circ}$	
Angle between steering knuckle bolt and wheel spindle.....	353	340	$101\frac{3}{4}^{\circ}$	
Caster angle.....	353	.....	$2\frac{1}{2}^{\circ}$	Plate 101. Fig. 3. Use wedges under springs to secure desired caster
	.....	340	$1\frac{1}{2}^{\circ}$	
Angle between spring seat and vertical plane of I-beam.....	353	340	90°	
I-beam installation (identification mark).....	353	340	.....	Unit number on upper front flange at R. H. end
I-beam twist (misalignment between steering knuckle bolts)...	353	340	$\frac{1}{2}^{\circ}$ allowable variation between ends	
Pivot balls, out of round	353	340	Worn limit, not over .010 in.	
Road clearance under front axle....	353	.....	$7\frac{11}{16}"$	To be measured with tires inflated to 45 lbs. and no load in car
	.....	340	$8\frac{1}{16}"$	
Steering cross-rod ball and socket adjustment.....	353	340	Automatic adjustment	
Steering cross-rod springs				
Free length.....	353	340	$\frac{33}{8}"$ approximately	
Compression.....	353	340	90-110 lbs. compressed to $\frac{3}{16}"$	
Steering knuckle bearing adjustment.....	353	340	Tighten adjusting plug only enough to eliminate play	
Stop-screw adjustment.....	353	340	$\frac{1}{2}$ to $\frac{3}{4}"$ clearance between tire and shock absorbers	
Toe-in of front wheels.....	353	340	$\frac{1}{8}"$ preferable, $\frac{1}{4}"$ max.....	Adjust by turning steering cross rod. See plate 3, Figs. 1, 2, 5, for use of wheel alignment gauges.
Tread—front wheels.....	353	.....	59"	
	.....	340	$57\frac{1}{2}"$	
Unit number location.....	353	340	Upper front flange at R. H. end	

FRONT AXLE



FRONT AXLE

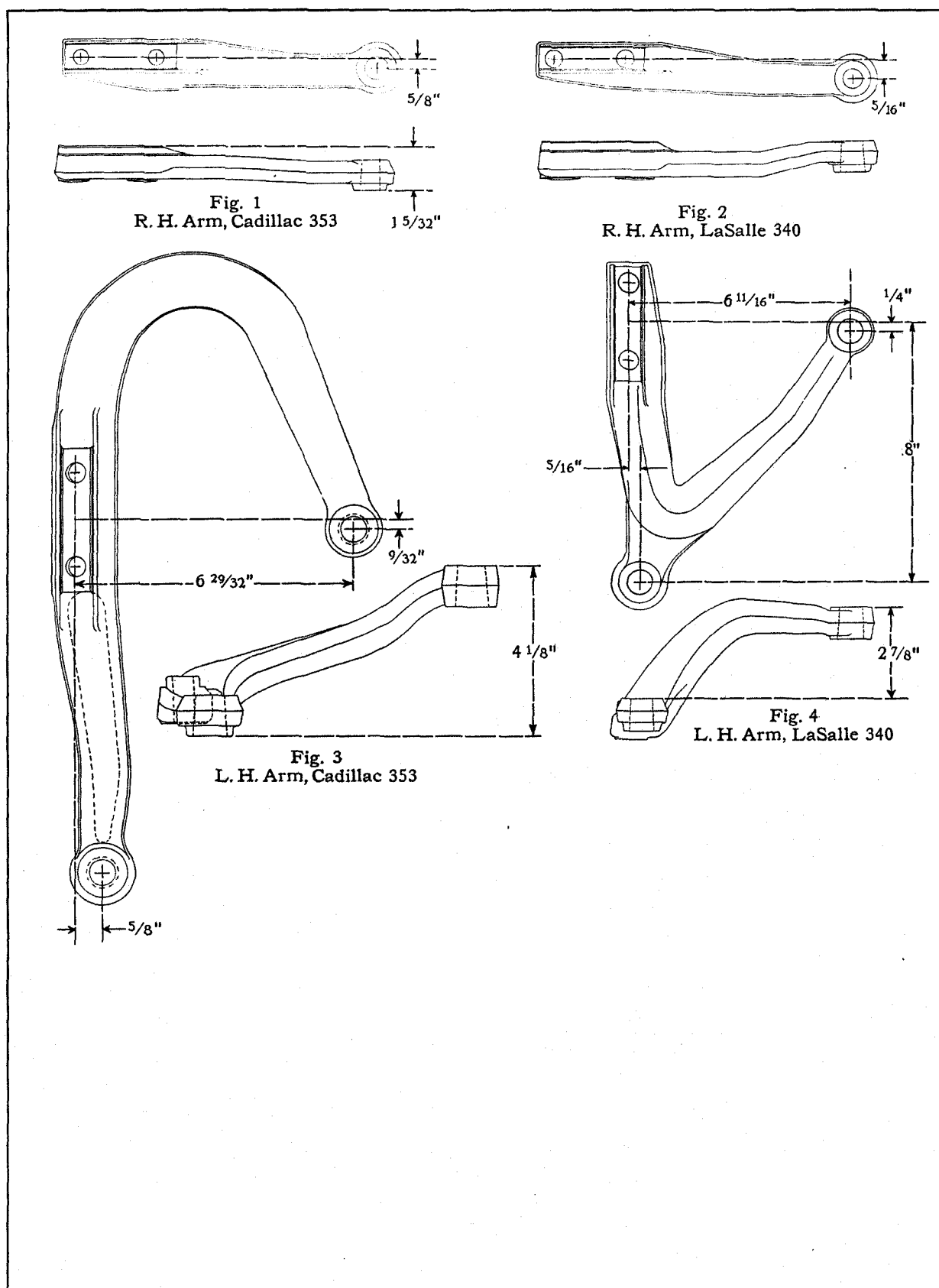


Plate 102. Steering Knuckle Arms
Cadillac 353—La Salle 340

Rear Axle

Subject	Cad.	LaS.	Specifications	Remarks
Axle housing out of true.....	353	340	Not over $\frac{3}{32}$ ".....	See Plate 7. Fig. 4
Axle shaft length.....	353	340	L. H. $32\frac{1}{2}$ "—R. H. $35\frac{1}{8}$ "	
Axle shaft out of true.....	353	340	Not over $\frac{1}{32}$ ".....	Use Ideal Gauge, Tool No. 102789 to check alignment of rear wheels
Differential carrier installation....	353	340	.....	See Note No. 1
Drive shaft-clearance between spline and hub of universal joint.....	353	340	New limits .001"—.005" Worn limit, not over .006"	
Drive shaft length.....	353	.....	140" wheelbase $62\frac{11}{16}$ " 152" wheelbase $74\frac{11}{16}$ " 340 134" wheelbase $58\frac{1}{8}$ "	
Drive shaft out of true.....	353	340	Not over .010"	
Gear ratios				
High.....	353	.....	4.39:1	Stamped on top of differential carrier
		340	4.07:1	
Medium.....	353	.....	4.75:1	
		340	4.54:1	
Low.....	353	.....	5.08:1	
		340	4.91:1	
Gear adjustment or replacement...	353	340	.....	See Note 2
Lubrication.....	353	340	.....	See lubrication table, page 243
Removal of rear axle and torsion tube assembly.....	353	340	.....	See Note 3
Road clearance under rear axle....	353	.....	$8\frac{3}{8}$ " } 340 $7\frac{3}{4}$ " }	To be measured with tires inflated to 40 lbs. and no load in car
Tread—rear wheels.....	353	340	$59\frac{1}{2}$ "	
Type of axle.....	353	340	$\frac{3}{4}$ " floating.....	See Plate 103. Fig. 2
Unit number location.....	353	340	Rear surface of housing—right-hand side	

1. Differential Carrier Installation

All the lubricant has been washed out of the bearings before the differential carrier assemblies are shipped by the Parts Division. It is important therefore to lubricate the front pinion shaft bearings before the assembly is installed, or they are liable to be damaged before the differential lubricant works its way up to them.

Place assembly on end with gears up and pour about a pint of differential grease on the pinion. Leave the assembly in this position until the grease has run down through the back bearing and has thoroughly lubricated the front bearing. The assembly is now ready for installation.

After installation, the differential case should, of course, be filled to the proper level.

2. Gear Adjustment

The pinion and driven gear are properly adjusted at the factory and this adjustment should not be changed. If adjustments or replacements are ever necessary the entire differential carrier assembly should be replaced and the old one together with its original shims, sent to the Factory Parts Division for exchange.

Use Puller (Tool No. 109404-T) when removing propeller shaft from pinion shaft. Do not use a hammer in removing the shaft or the pinion shaft may be damaged. A charge will be made for driven gear and pinion on all differential carrier assemblies returned for exchange with damaged pinion shafts.

3. Removal of Rear Axle

Many of the service operations on the rear axle can be performed to better advantage if the axle and torsion tube assembly is removed. To remove the assembly, take off the spring clips, drop the rear ends of the springs and disconnect the universal joint housing from the transmission case.

REAR AXLE

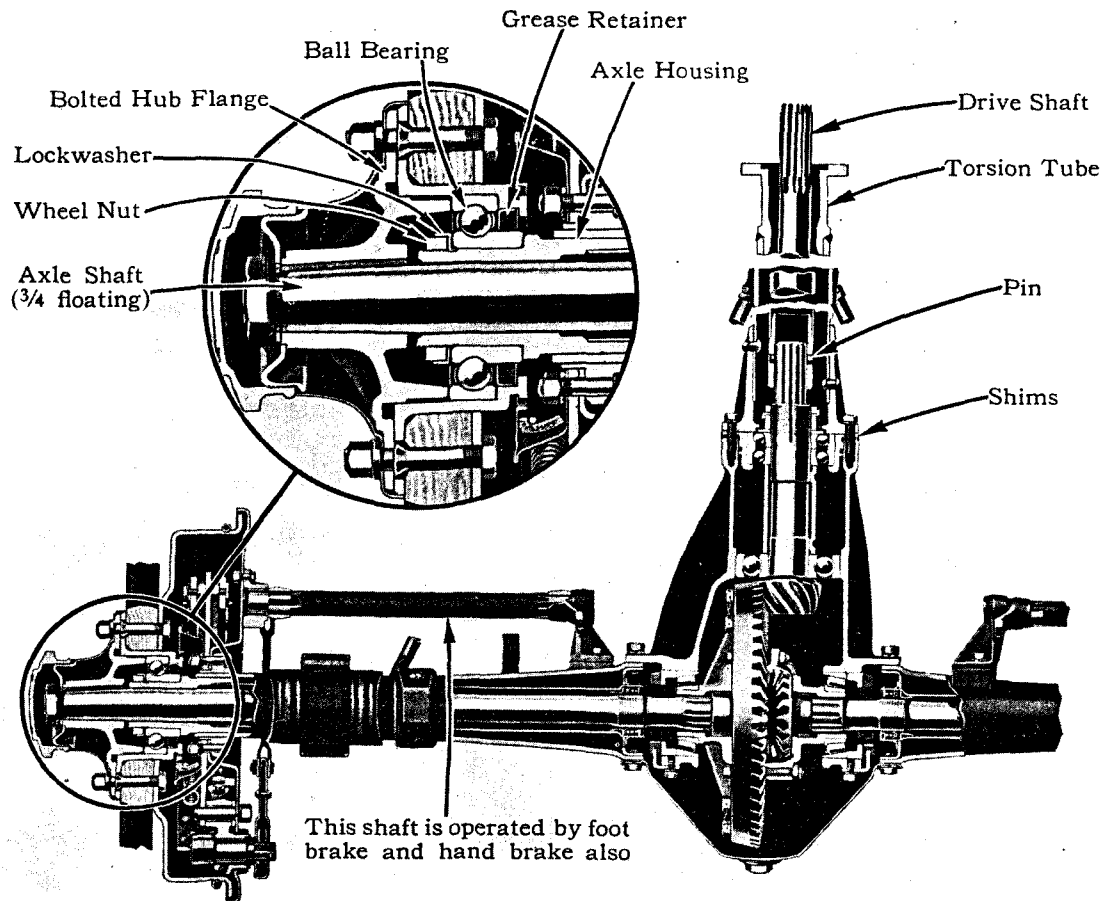


Fig. 1
Rear Axle—Three-quarter Floating Type—Wood Wheels
(Sectional view)

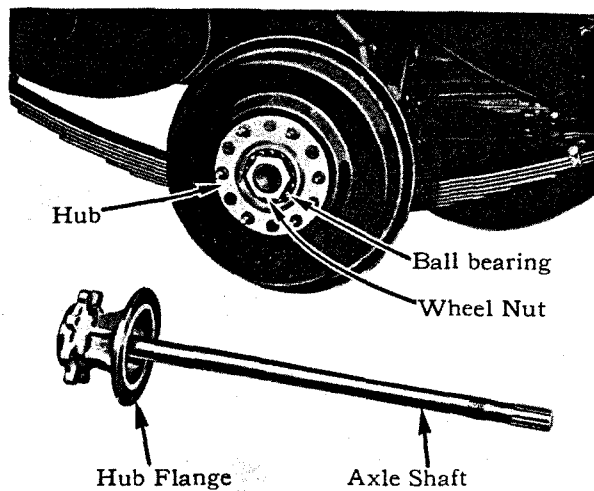


Fig. 2
Axle Shaft, Flange and Hub-Wire Wheel Equipment

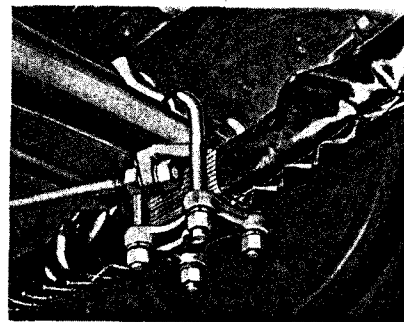
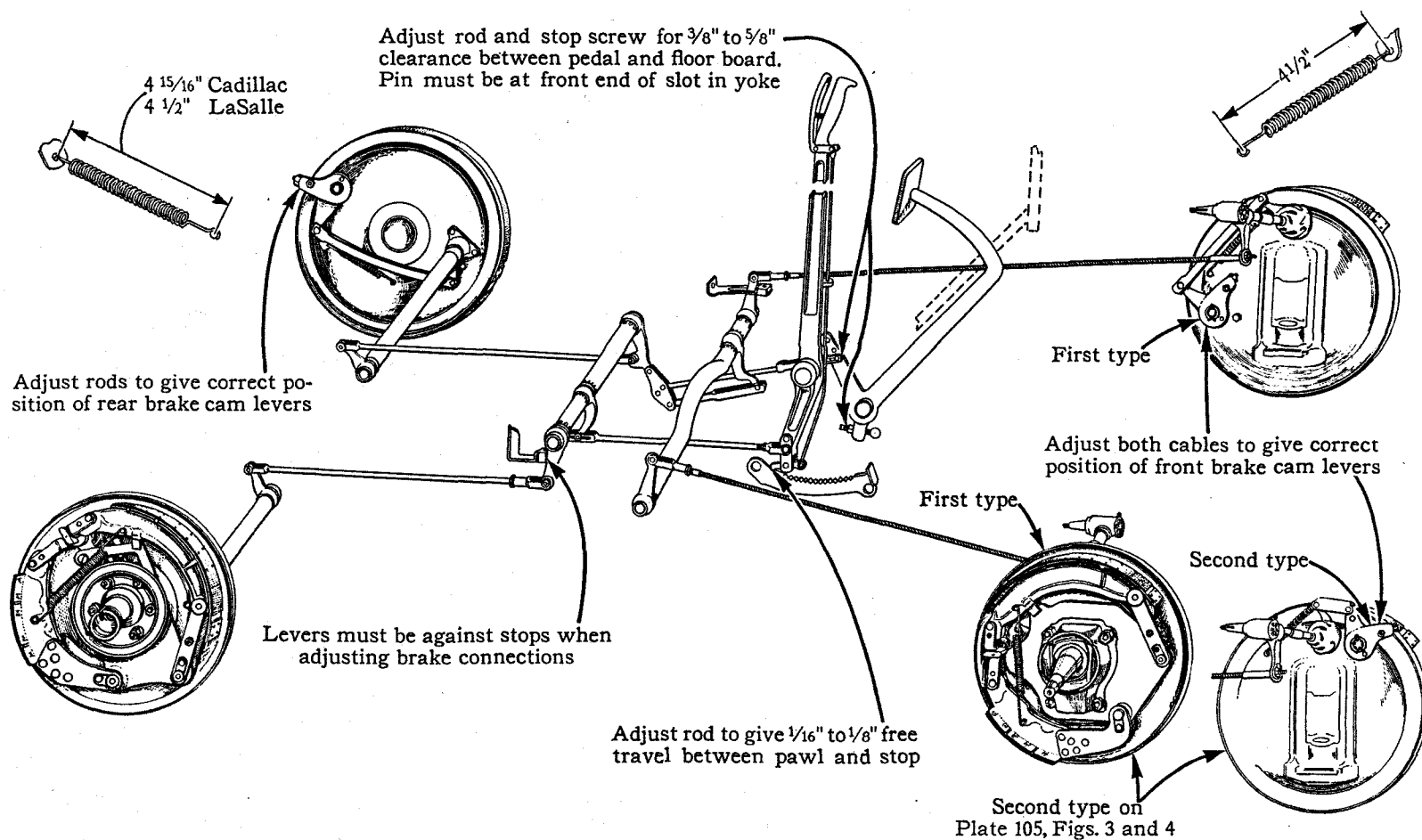


Fig. 3
Underslung rear springs

Brakes

Subject	Cad.	LaS.	Specifications	Remarks	
Clearances					
Brake lining and drum.....	353	340	.007" approximately.....	Clearance secured by turning adjusting nut on cam lever. <i>See Plate 105. Figs. 2, 4, 6</i>	
Pedal and bottom of toe-board...	353	340	$\frac{3}{8}$ " to $\frac{5}{8}$ ".....		
Drums—nominal inside diameter..	353	16 $\frac{1}{2}$ " front and rear	<i>See Plate 106 Fig. 4</i>	
		340	15" front and rear		
Drums out of round.....	353	340	Not over .007"	When regrinding, drums should never be ground down more than .040" under original thickness	
Drum thickness.....	353	340	$\frac{7}{32}$ " approximately.....		
Lining					
Braking surface—total.....	353	214 $\frac{7}{8}$ sq. in.		When relining long shoes replace lead tips using lining rivets
		340	173 $\frac{3}{4}$ sq. in.		
Length—short shoe.....	353	.....	7 $\frac{1}{8}$ "	
		340	6 $\frac{1}{2}$ "		
Length—long shoe.....	353	.....	15 $\frac{3}{16}$ "	
		340	13 $\frac{1}{8}$ "		
Thickness.....	353	340	$\frac{3}{16}$ " (.183"—.198")		
Width.....	353	.....	2 $\frac{1}{4}$ "	
		340	2"		
Pull back spring—front and rear brakes					
Free length.....	353	8 $\frac{3}{16}$ " inside loops		
Tension.....	353	.....	80 to 90 lbs. at 9 $\frac{1}{4}$ " inside loops	
Pull-back spring front and rear brakes					
Free length.....		340	7 $\frac{5}{16}$ " inside loops		
Tension.....		340	60 to 70 lbs. at 7 $\frac{1}{8}$ " inside loops		

BRAKES



Note: Make any necessary brake connection adjustments with brakes released before adjusting brake shoes

BRAKES

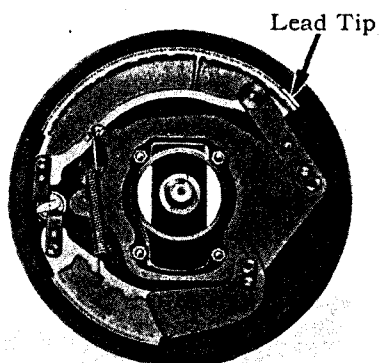


Fig. 1
Front Brake First type

Cam Bracket Nuts.
Adjust as before.

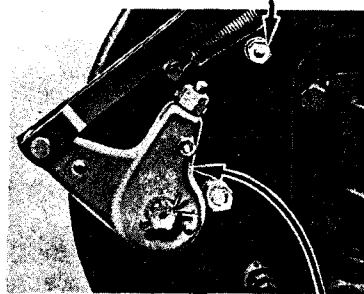


Fig. 2
Front Brake Cam Lever First type

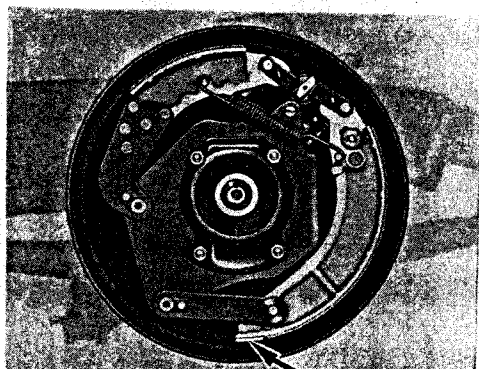


Fig. 3
Front Brake Second type

Cam
Bracket
Nut

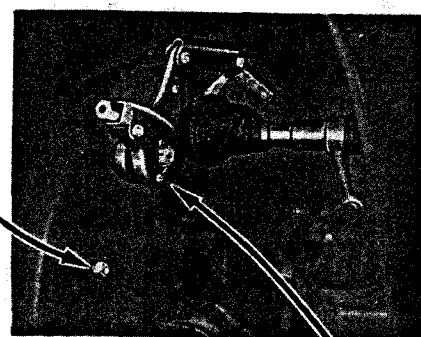


Fig. 4
Front Brake Cam Lever Second type

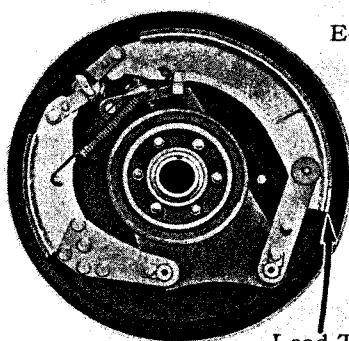


Fig. 5
Rear Brake

Lead Tip

Cam Bracket Nut

Equalize Cam Levers
and adjust for pedal
travel as before.
On 353 chassis
before 5-5085
and 340 before
6-8446 back off
L. H. front and
rear Cam Adjust-
ing Nut one-half
turn

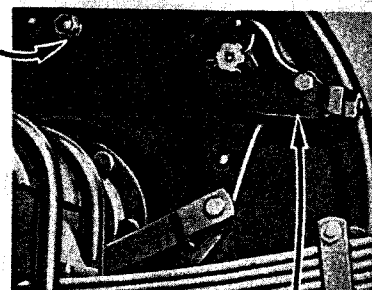


Fig. 6
Rear Brake Cam Lever

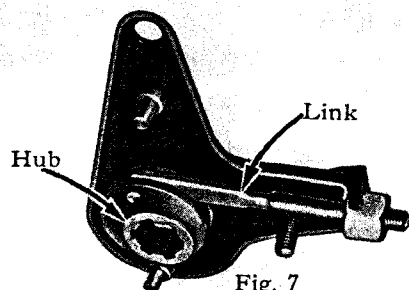


Fig. 7
Sectional view of Cam Lever

Support Arm

Clutch Pedal
Adjusting Nut

Stop Screws

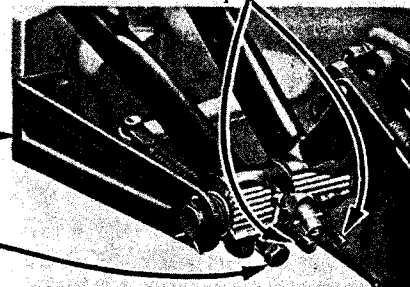


Fig. 8
The Pedals are carried on roller bearings

Clutch

Subject	Cad.	LaS.	Specifications	Remarks
Clearances				
Driving plates and driving pins..	353	340	New limits—.002" to .0045" Worn limit, not over .008"	
Hub and splines on clutch connection shaft.....	353	340	New limits—.0005" to .002" Worn limit, not over .005"	
Release bearing sleeve and transmission bearing cap.....	353	340	New limits—.001" to .005" Worn limit, not over .006"	
Pedal and bottom of toe-board....	353	340	$\frac{3}{8}$ " to $\frac{5}{8}$ ".....	Plate 106. Fig. 4.
Clutch pedal free movement.....	353	340	.....	See Note 1
Disc facings				
Diameter inside.....	353	340	7"	
Diameter outside.....	353	340	10"	
Thickness.....	353	340	.135 to .145"	
Disc thickness over all (including facings).....	353	340	New limits—.335" to .360" Worn limit, not under $\frac{7}{32}$ " (.219")..	See Note 2
Limit of wear.....	353	340	.....	Plate 106. Fig. 2. See Note 3.
Removal of clutch.....	353	340	.....	See Note 4

1. Clutch Pedal Free Movement

Clutch pedal free movement measured at the pedal should be $1\frac{1}{8}$ " to $1\frac{1}{4}$ " for first 3000 miles and 1" to $1\frac{1}{8}$ " thereafter. The initial adjustment for new discs is the same as for the first 3000 miles.

2. Clutch Disc Facings

Never install new facings on discs. Replace complete driven disc assemblies to insure correct overall thickness at all points.

3. Limit of Clutch Wear

If it should be necessary to remove the transmission the clutch wear should be checked and new discs installed if ad-

visable, before reinstalling the transmission.

Clutch discs do not need replacing if clutch fingers are 1" or more below surface of pressure plate as indicated in Fig. 2. Plate 106. The clutch wear may also be checked by noting the amount of clearance remaining between the rear driving plate and the shoulder on the pressure plate assembly stud. With new discs the clearance at this point should be $\frac{1}{4}$ ". Discs should be replaced if it is ever found that there is not at least $\frac{1}{16}$ " clearance remaining.

4. Removal of Clutch

The clutch can be taken out after removing the 4 nuts indicated in Fig. 3. Plate 106.

CLUTCH

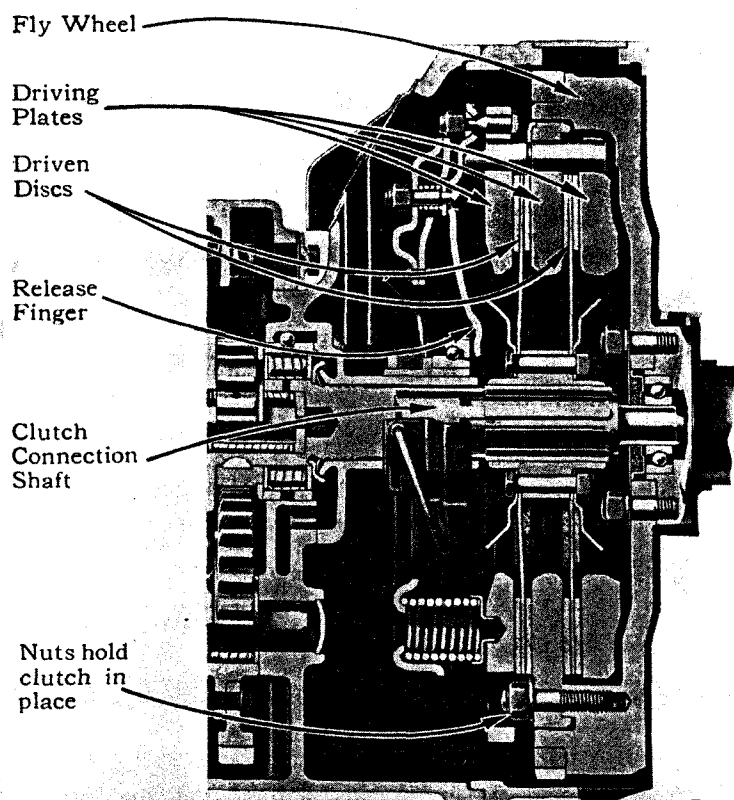


Fig. 1
Clutch and Engine Fly-wheel
(Sectional view)

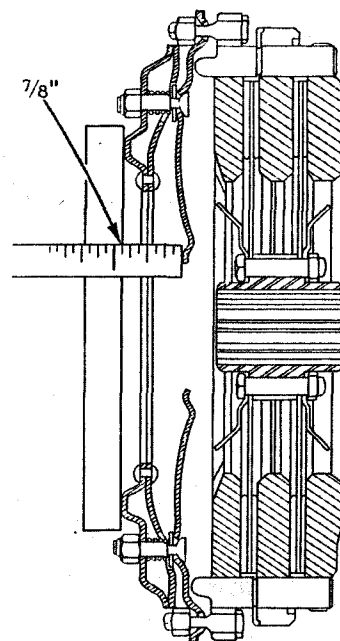


Fig. 2
Replace discs if distance between release
finger and pressure plate is $\frac{7}{8}$ " or less

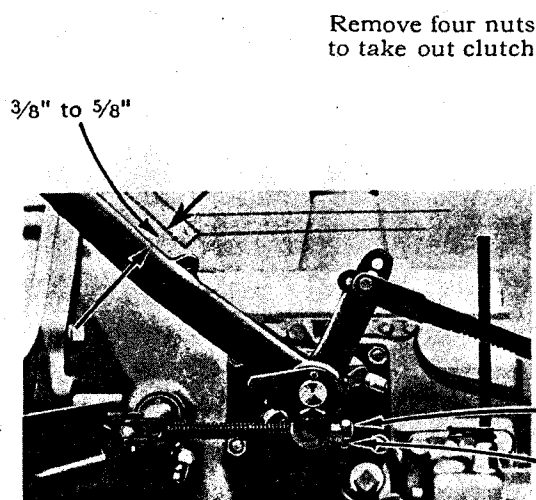


Fig. 4
Adjust stop screw to give $\frac{3}{8}$ " to $\frac{5}{8}$ "
clearance between pedal and toe board

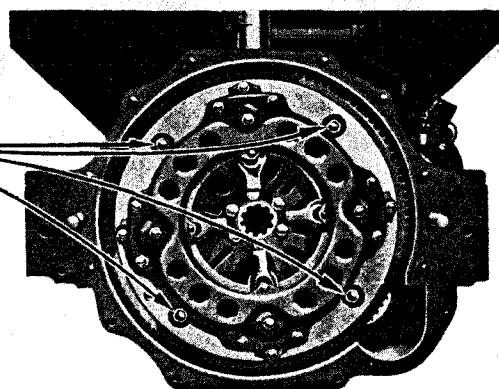
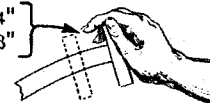


Fig. 3
The clutch is held in place by four nuts

Adjust clutch throw-out screw
for free movement noted below
First 3000 miles — $1\frac{1}{8}$ " to $1\frac{1}{4}$ "
After 3000 miles — 1" to $1\frac{1}{8}$ "

Pedal Adjusting Screw



Cooling System

Subject	Cad.	LaS.	Specifications	Remarks
FAN				
Belt.....	353	340	Part No. 872220	
Adjustment.....	353	340	.....	See Note No. 1
Tension.....	353	340	Slack $\frac{5}{8}$ ".....	Plate 22. Fig. 3.
Diameter of fan.....	353	.....	21"	
		340	20"	
Identification marks.....	353	.....	Recessed hub	
		340	No hub	
Lubrication.....	353	340	.....	Force feed from crankcase. Plate 107 Fig. 1A.
HOSE CONNECTIONS				
			Length	Inside Dia.
Cylinder to radiator (top).....	353	.....	12 $\frac{1}{16}$ ".....	1 $\frac{1}{4}$ "
		340	11 $\frac{1}{4}$ ".....	1 $\frac{1}{4}$ "
Cylinder to elbow.....	353	340	2 $\frac{1}{4}$ ".....	1 $\frac{1}{4}$ "
Elbow to pump.....	353	340	16 $\frac{5}{8}$ ".....	1 $\frac{5}{8}$ "
Pump to radiator.....	353	340	11".....	1 $\frac{7}{8}$ "
RADIATOR				
Anti-freeze solution			Qts.	Sp. Gr. at 60° F.
Alcohol required for 10°F.	353	340	7 $\frac{1}{4}$	.9668
- 0°F.	353	340	9	.9567
-10°F.	353	340	10 $\frac{3}{4}$	.9485
-20°F.	353	340	12 $\frac{1}{4}$	.9350
-30°F.	353	340	13 $\frac{3}{4}$	.9260
				% by Vol.
				30
				38
				45
				51
				57
Capacity of cooling system.....	353	340	6 gals.....	See Note No. 2
Flushing cooling system.....	353	340	.....	See Note No. 3
Thermostatic shutter control				
Shutters start to open.....	353	340	155° to 165° F.....	See Note No. 4
Shutters full open.....	353	340	180° F.	
Shutters start to close.....	353	340	165° to 175° F.	
Shutter rod adjustment.....	353	340	Adjustable rod $\frac{1}{8}$ " long.....	See Note No. 5. Plate 23. Fig. 4.
WATER PUMP				
Clearance between impeller and pump body.....	353	340	New limits—.055" to .065" Worn limit, not over .075"	
Clearance between drive sprocket and support.....	353	340	New limits—.003" to .005" Worn limit, not over .010"	
Clearance between pump shaft and bushings.....	353	340	New limits—.001" to .003" Worn limit, not over .005"	

COOLING SYSTEM

1. Fan Belt Adjustment

To adjust fan belt, loosen clamping nut on bracket and raise or lower fan support until correct tension is secured. After tightening clamping nut check belt tension again to see that adjustment has not changed during tightening operation.

2. Radiator Filling Level

The recommended level to which the radiator should be filled is half way to the top of the upper tank. It is especially important not to fill the radiator too full in the winter because expansion will cause a loss of anti-freeze solution through the overflow.

3. Flushing Cooling System

The cooling system should be flushed out about every 4000 miles to prevent the excessive accumulation of sediment and scale.

Disconnect lower hose from radiator and attach flushing hose to radiator outlet. The water pressure for this flushing operation should not exceed 20 to 25 pounds or the radiator may be damaged. The flushing should be continued until water runs clean from the lower hose connection.

4. Test for Radiator Thermostat

To test the thermostat, immerse it in water of the correct temperature. The plunger should start to move at not less than 150° and should finish its stroke ($\frac{1}{32}$ ") at not over 175°.

5. Shutter Rod Adjustment

The shutter operating rod should be adjusted so that the center of the hole in the adjustable end is about $\frac{1}{8}$ " beyond the center of the holes in the operating arms when the rod is detached. Plate 24. Fig. 4.

COOLING SYSTEM

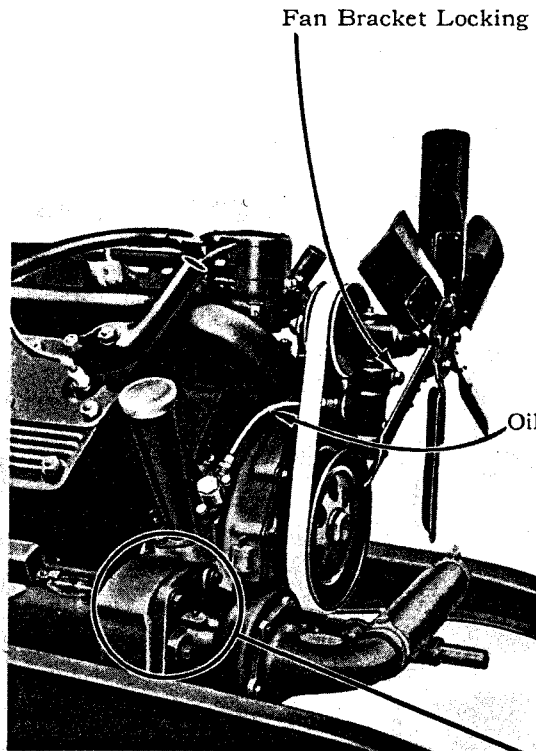


Fig. 1
Front End of Engine — LaSalle 340
Cadillac 353 is similar except:
Fan and Spark Plug Covers

Fan Bracket Locking Nut

Oil Return

Oil Feed Line

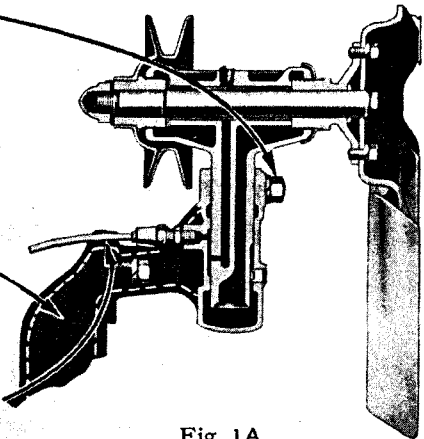
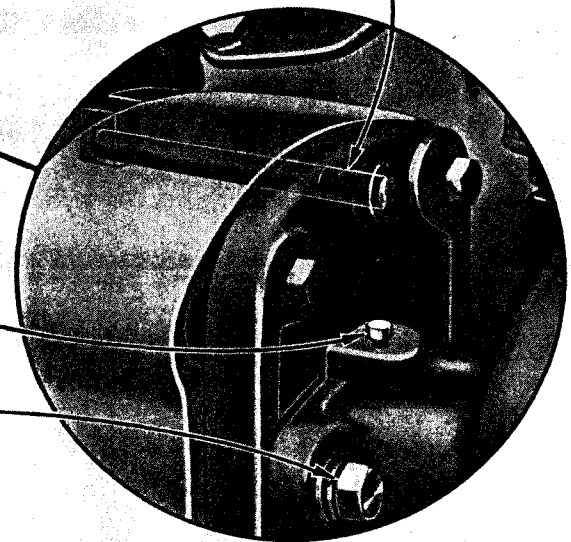


Fig. 1A
Sectional View of Fan Mounting—Cadillac 353
LaSalle 340 is similar except:
Fan Assembly

Support Locking Key



Hold lock pin out while
turning pump gland nut

Loosen pump support nuts
before adjusting drive chain

Fig. 1B
Water Pump Mounting

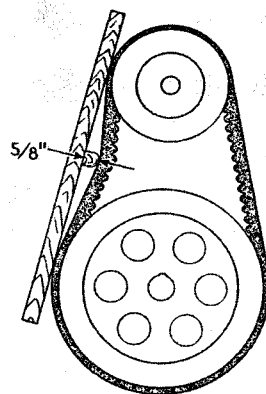


Fig. 2
Fan Belt Tension

Electrical System

Subject	Cad.	LaS.	Specifications	Remarks
BATTERY.....	353	.....	Exide type—3 L X R V—15—20	
	.....	340	Exide type—3 M X V—15—1	
Capacity				
Rated capacity.....	353	.....	130 ampere hours	
	.....	340	100 ampere hours	
Lighting.....	353	.....	5 amperes for 26 hours	
	.....	340	5 amperes for 20 hours	
Starting.....	353	.....	137 amperes for 20 minutes	
	.....	340	114 amperes for 20 minutes	
Charging rate on bench—start....	353	340	10 amps.	
Charging rate on bench—finish....	353	340	4 amps.	
Corrosion at terminals.....	353	340	.....	See Note No. 1
Dimensions.....	353	.....	20 $\frac{7}{16}$ " x 5 $\frac{1}{2}$ " x 8 $\frac{11}{16}$ " high overall	
	.....	340	10 $\frac{3}{16}$ " x 7 $\frac{1}{8}$ " x 9 $\frac{11}{16}$ " high overall	
Ground connection.....	353	340	Positive battery post	
Plates—number of.....	353	340	15	
Testing—electrolyte.....	353	340	.....	See Note No. 2
Testing—voltage.....	353	340	.....	See Note No. 3
Voltage—rated.....	353	340	6 volts	
Water—addition of.....	353	340	.....	See Note No. 4
CIRCUIT BREAKER.....	353	340	Delco-Remy 5759	
Operation				
Lockout opens.....	353	340	25-30 amperes	
Vibrator starts.....	353	340	25-30 amperes	
CUT-OUT RELAY.....	353	340	Delco-Remy 2663	
Air-gap—between armature and core. (Contacts held closed)....	353	340	.014"—.021".....	Hold contacts together lightly while measuring air-gap.
Contact gap.....	353	340	.015"—.025"	
Operation				
Contacts close.....	353	340	Approximately 7.5 volts.....	420 R. P. M. armature speed. 8-10 M. P. H. car speed.
Contacts open.....	353	340	0—2.5 amperes discharge.....	See Note No. 5
GENERATOR.....	353	340	Delco-Remy 927-D	
Armature				
Commutator out of round.....	353	340	Not over .002"	
End play of shaft.....	353	340	Not over .005"	
Side play in bearings.....	353	340	Not over .004"	
Brushes				
Limit of wear.....	353	340	.....	See Note No. 6. See Plate 108. Fig. 5.
Spring tension.....	353	340	16-20 oz.....	See Plate 108. Fig. 4. Also see Note No. 7.

ELECTRICAL

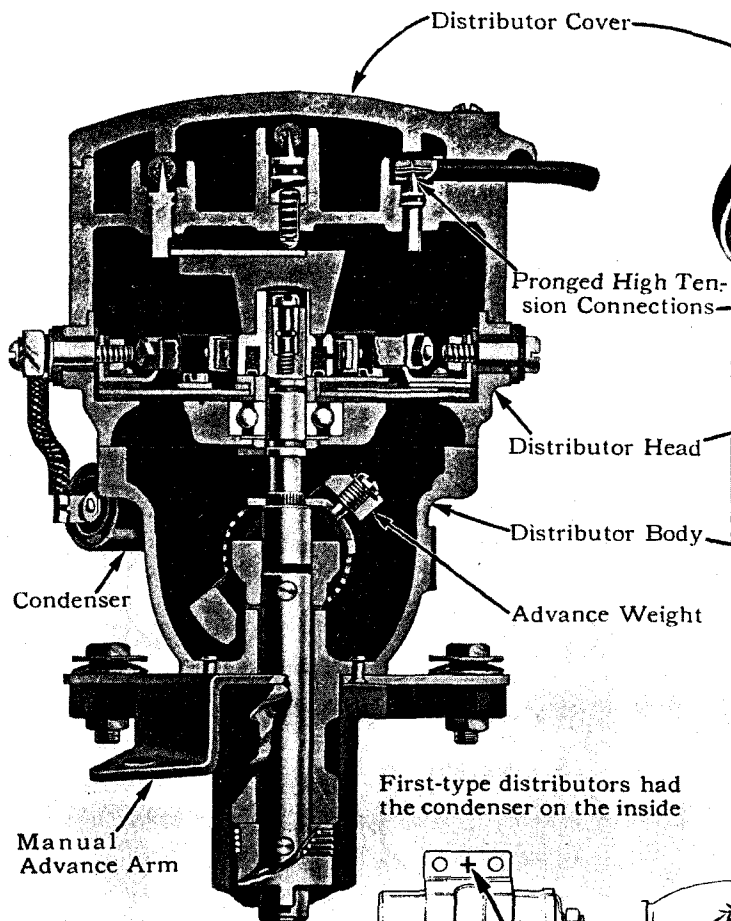


Fig. 1
Sectional View of Timer Distributor
For both internal and external condenser replacement use latest external type only, identified by "+" as shown

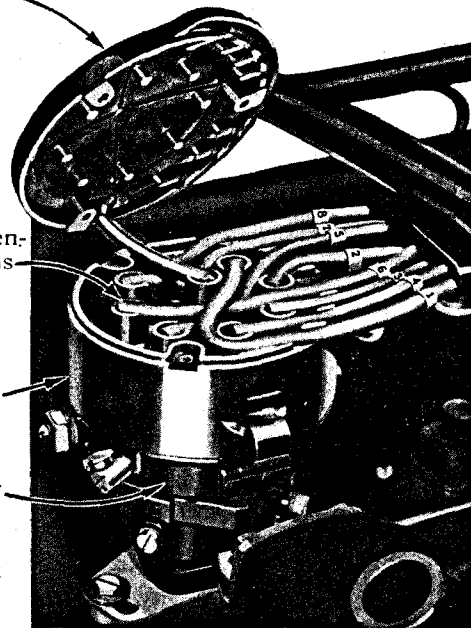
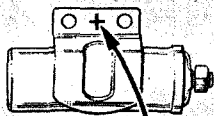


Fig. 2
High Tension Connections at Timer Distributor

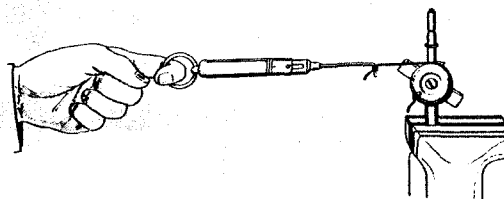


Fig. 3
Testing Automatic Advance Weight Spring

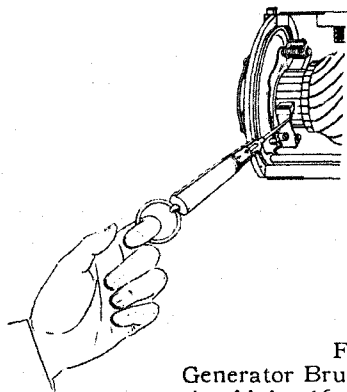


Fig. 4
Generator Brush Spring tension should be 16 to 20 oz. just as brush is lifted off commutator

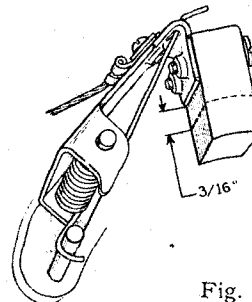


Fig. 5
Replace Generator Brushes before they are worn down to $\frac{3}{16}$ " from brush arm

ELECTRICAL SYSTEM

Subject	Cad.	LaS.	Specifications	Remarks
Charging rate on bench				
700 R. P. M.—cold.....	353	340	7 amps. at 7.2 to 7.4 volts	
1400 R. P. M.—cold.....	353	340	18 amps. at 8.2 to 8.6 volts	
1600 R. P. M.—hot.....	353	340	10-12 amps. at 7.3 to 7.7 volts....	See Note No. 8
Charging rate on car.....	353	340	Maximum 15-20 amps.—cold.....	See Note No. 8
Current regulation.....	353	340	3rd brush—thermostat.....	Plate 24. Fig. 4. See Note No. 10
Open circuit operation.....	353	340	.....	See Note No. 11
Starts to charge (cut-out contacts close).....	353	340	420 R. P. M. armature speed 7.5 volts	
Stops charging (cut-out contacts open).....	353	340	0—2.5 amps. discharge.....	See Note No. 5
Thermostatic control.....	353	340	Resistance in series with field coils	See Note No. 8. Page 52.
Contacts open.....	353	340	175°F generator temperature	
Voltage (rated).....	353	340	6 volts	
HORN.....	353	340	Delco-Remy K 19-B type 1100	
Adjustments				
Air-gap (between armature and field core).....	353	340	.025.....	Plate 25. Fig. 2.
Contact gap.....	353	340	To secure desired tone.....	Plate 25. Fig. 2.
Current consumption.....	353	340	7-8 amperes	
Position of vibrating spring.....	353	340	Slightly below horizontal.....	Plate 25. Fig. 2.
IGNITION				
Coil.....	353	340	Delco-Remy type 530-B	
Current consumption.....	353	340	2 amperes stalled 2.5 amperes running	
Condenser.....	353	340	.....	See Note No. 9
Distributor.....	353	340	Delco-Remy type 4055	
Angle between contact arms.....	353	340	30°	See Note No. 10, page 52
Contact gap.....	353	340	.018"—.022"	
Firing order.....	353	340	1L-4R-4L-2L-3R-3L-2R-1R	
Side play—timer shaft ball bearing.....	353	340	Worn limit, not over .003"	
Spark advance—automatic.....	353	340	28° on flywheel	
Spark advance—manual.....	353	340	39° on flywheel	
Tension of contact arm springs..	353	340	16-20 oz.....	Measure with spring scale tool No. 100242. Plate 27. Fig. 1.
Tension of spark advance weight spring.....	353	340	.....	See Note No. 15
Timing.....	353	340	Full manual advance $2\frac{1}{4}$ " (7° 20') before center.....	See Note No. 12
SPARK PLUGS.....	353	340	A.C. type G-10.....	See Note No. 13
Spark point gap.....	353	340	.025"—.028"	
Thread.....	353	340	Metric	

ELECTRICAL

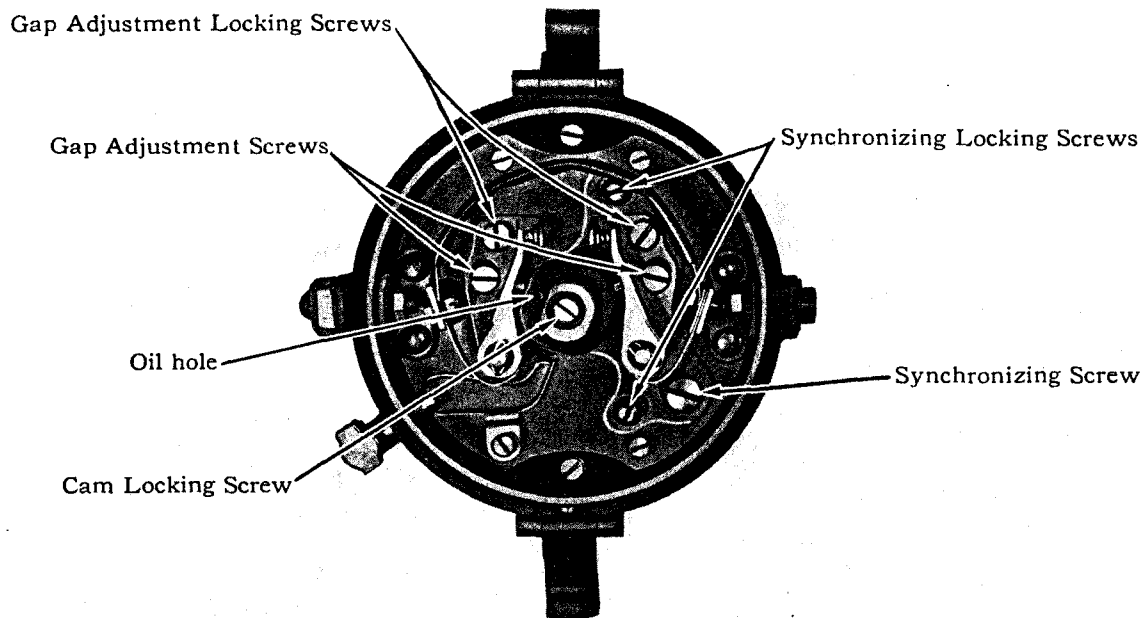


Fig. 1
Timer Distributor Adjustments

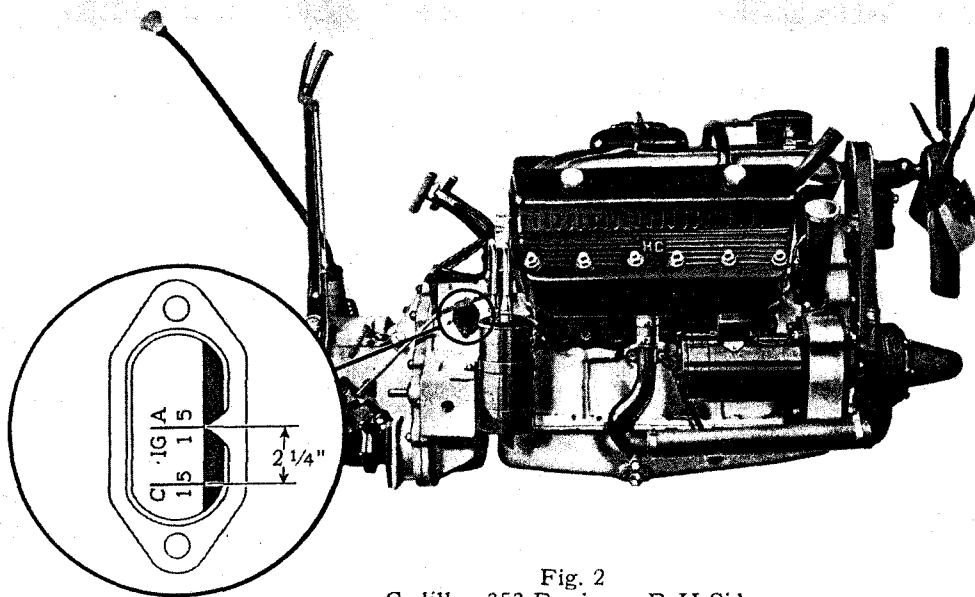


Fig. 2
Cadillac 353 Engine — R. H. Side

ELECTRICAL SYSTEM

Subject	Cad.	LaS.	Specifications	Remarks
STARTING MOTOR.....	353	340	Delco-Remy type 728-D	
Armature				
Clearance between shaft and bearings.....	353	340	Worn limit, not over .010"	
Commutator out of round.....	353	340	Worn limit, not over .002"	
End play—armature shaft.....	353	340	Worn limit, not over .025"	
Brushes.....	353	340	4	
Tension of brush springs.....	353	340	24-28 oz.....	Test with spring scale, tool No. 100242
Clutch spring (on splined shaft)				
Free length.....	353	340	2¼" approx.	
Compression.....	353	340	46 to 52 lbs. at 1"	
Gear ratios.....	353	340	.....	Plate 110. Fig. 1.
Armature shaft pinion.....	353	340	14 teeth	
Driven gear on sliding gear shaft	353	340	29 teeth	
Fly wheel gear.....	353	340	113 teeth	
Sliding gear.....	353	340	9 teeth	
Total external reduction.....	353	340	1 to 12 5/9 actual.....	Ratio between sliding gear and flywheel
Total internal reduction.....	353	340	1 to 2 1/14 actual.....	Ratio between armature shaft and sliding gear shaft
Total overall gear reduction.....	353	340	1 to 26 approximately.....	Ratio between armature shaft and fly wheel
Number of poles.....	353	340	4	
TELEPHONE.....	353	340	Stentor.....	See Note No. 14

1. Battery Terminal Corrosion

Warm water, poured slowly over corroded battery terminals, will dissolve the copper sulphate that has been deposited there so that it can be brushed off and flushed away easily. This method prevents the danger of neutralizing the battery electrolyte through the use of ammonia or other alkaline solutions.

Apply a heavy coating of vaseline to the terminals after they have been cleaned, to retard further corrosion.

2. Battery Electrolyte Tests

The Electrolyte (Battery solution) should be tested with a hydrometer. The specific gravity as registered by the hydrometer should be 1.270 to 1.290 at 60°F if the Battery is fully charged. A gravity reading of 1.150 or below indicates that the Battery is entirely discharged and it should be removed from the car and recharged.

Whenever a reading under 1.250 is due to a temporary abnormal demand for current through excessive use of lights or starter, the charging rate should be sufficient to bring the Battery up to a fully charged condition again. On the other hand, if the current requirements have been normal and it appears that the charging rate is not high enough to meet the requirements of the electrical system, the generator should be adjusted for a slightly higher charging rate.

If the electrolyte tests below 1.225 the battery should be recharged from an outside source.

3. Battery Voltage Tests

Battery voltage tests must be made with proper instruments to be of any value. Ordinarily, tests of this nature should be made by an experienced battery man.

4. Adding Water to Storage Battery

The correct level for the battery electrolyte is just below the

bottom of the filler tubes. If the liquid comes above the bottom of the tubes it may be forced up and overflow because of pressure generated within the battery by its "gassing."

Inspect the battery every 1000 miles during the winter and every 500 miles (or every two weeks) during the summer, to make sure the electrolyte is up to the proper level. Only distilled water or fresh rain water kept in a glass, rubber or porcelain lined container, should be used to replace liquid lost due to evaporation.

If electrolyte has been lost through overflow or spilling, it should be replaced by a competent battery repair man.

5. Discharge Current at Cut-out Opening

When the cut-out contacts are properly adjusted, the ammeter should show a discharge of not more than 2½ amperes when the cut-out contacts open, provided all the car lights are turned off.

6. Limit of Brush Wear

Generator brushes should be replaced before they become worn down to within ⅛" of brush arm.

7. Checking Brush Spring Tension

Attach spring scale to brush arm as shown in Fig. 4, Plate 108. Scale should register 16-20 oz. just as brush is lifted away from commutator.

8. Charging Rate

The charging rate on the car should be checked when the generator is cold and with only the ignition switch turned on. Run the engine at the speed where the maximum charging rate is shown—corresponding to about 25 to 30 miles per hour. The ammeter should register not less than 15 amps nor more than 20 amps. If the cold reading is within these limits the hot reading will take care of itself and will be automatically reduced after a long enough period of operation.

ELECTRICAL

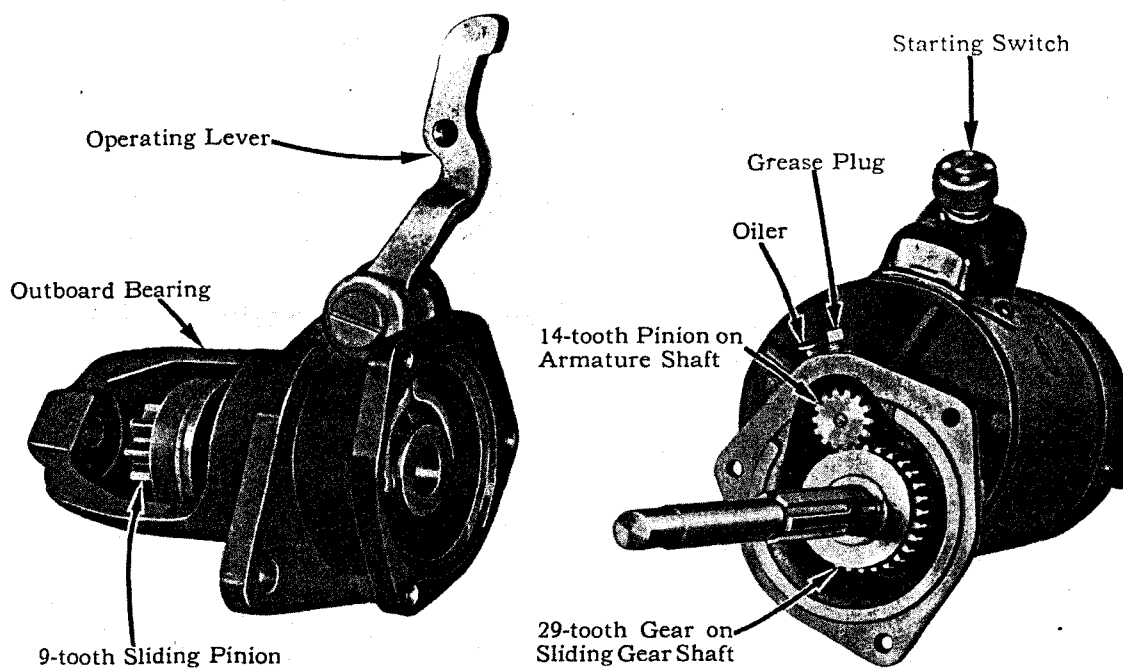


Fig. 1
The Starting Motor has a 2 to 1 internal gear reduction

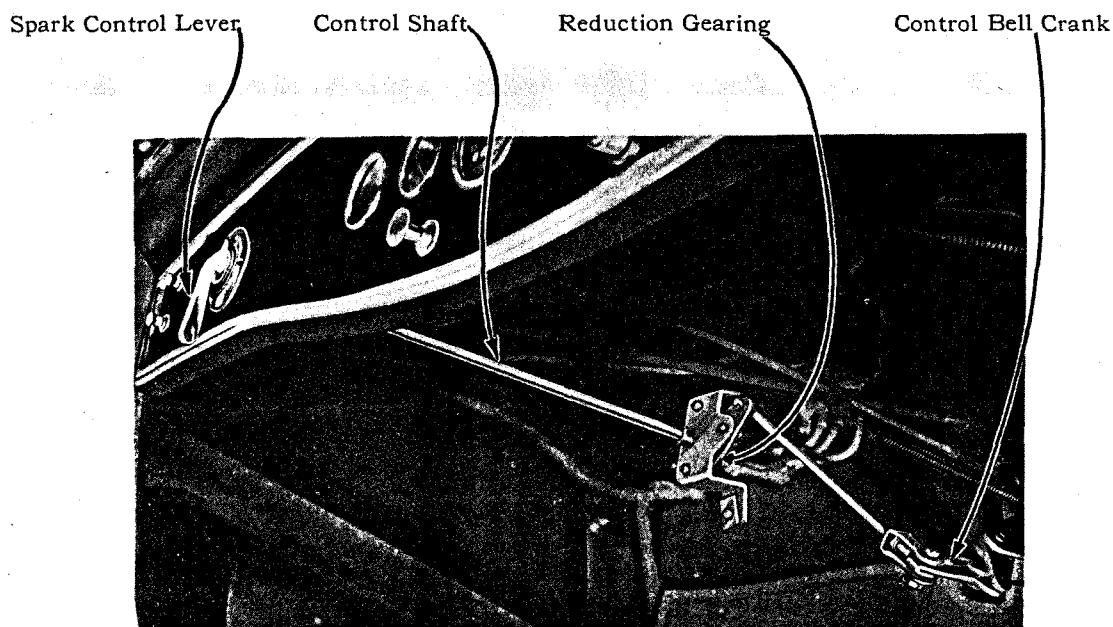


Fig. 2
The manual spark control lever on the instrument panel operates through reduction gears and a bell-crank on the dash

ELECTRICAL SYSTEM

9. Condenser Replacement

When replacement of inside (first) type condenser is necessary, take out dummy screws on outside of distributor body and install latest type outside mounted condenser identified by + stamped on mounting pad.

10. Third Brush Regulation

The Generator starts to charge at an armature speed of 420 R. P. M. and delivers its maximum output at about 1400 R. P. M. At speeds beyond the maximum output range the generator output will be gradually reduced by the regulating action of the third brush. This prevents the battery from becoming heavily overcharged as a result of prolonged high speed operation.

In addition to this inherent 3rd brush current regulation an automatic thermostat within the Generator shunts the field current through a resistance unit as soon as the Generator temperature rises to 175° thus affecting a further current reduction. See Page 52, Note 8.

11. Open Circuit Operation

If it should ever be necessary to operate the engine without the battery connected in the circuit the Generator must be grounded first or it will be damaged. One end of the grounding wire should be connected to the front binding post on the cut-out and the other end connected to ground under one of the cut-out mounting screws.

12. Ignition Timing

When checking or resetting the ignition timing the spark

control lever on the instrument panel should be turned to full advance or as far as possible in a counter-clockwise direction and the marks IG/A on the fly wheel in line with the indicating point on the fly wheel housing. (See Plate 109, Fig. 2.) Check cam setting at IG/A—1/5 with No. 1 piston at firing point and synchronize movable contacts at IG/A—2/6 with No. 2 piston at firing point.

13. Duco on Spark Plugs

Any duco on the spark plugs (especially on new cars) should be removed with thinner or alcohol.

14. Stentor Phone Replacement

The stentor phone units in Fleetwood Imperial and Town cars are installed in matched pairs. If it is ever necessary to replace either unit they should both be removed and a new matched pair installed in their places.

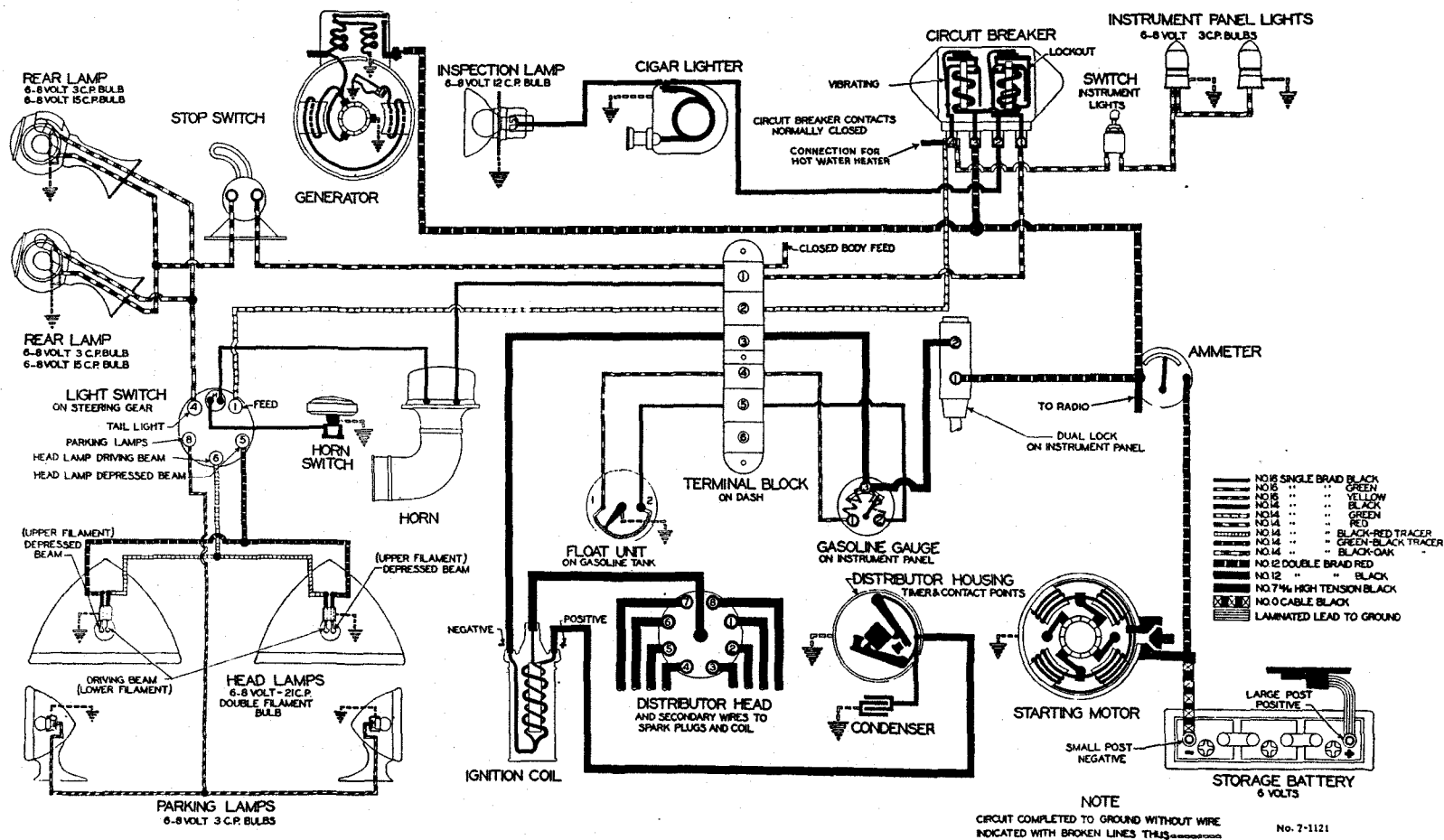
In the event of weak signals with pairs known to be properly matched, check carefully for loose connections and possible shorts or grounds in the wiring caused by staples or tacks.

15. Testing Automatic Spark Advance Spring

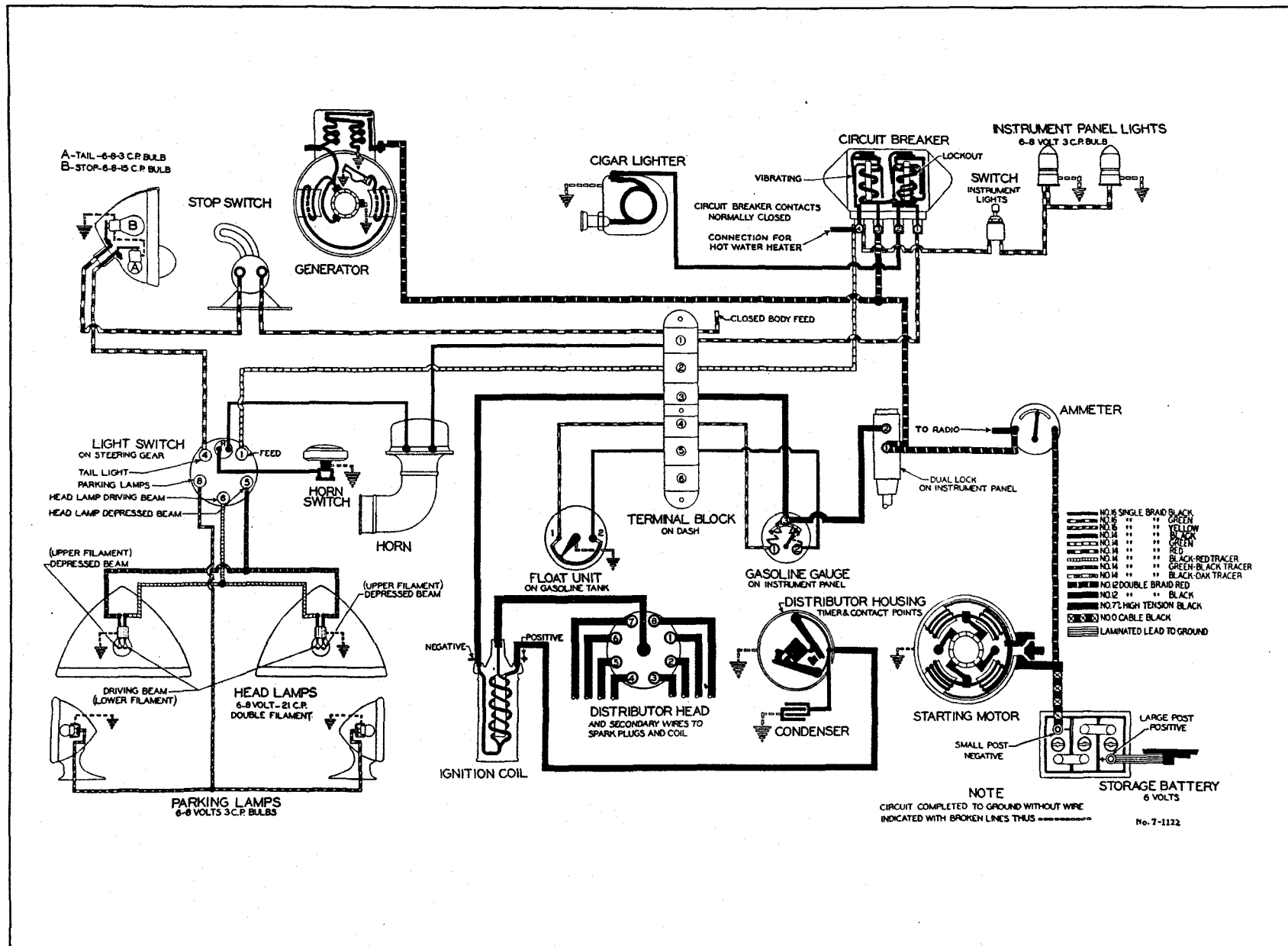
Attach a small flexible wire to drum covering advance weight spring and with spring scale (Tool No. 100242) check up on tension of advance spring. Scale should register approximately 4½ pounds just as advance pin reaches bottom of slot in advance plate. Necessary adjustments can be made by loosening the screw in the drum and turning the drum to secure the desired tension.

ELECTRICAL

Plate 111. Chassis Wiring Diagram
Cadillac 353



ELECTRICAL



Engine

Subject	Cad.	LaS.	Specifications	Remarks
Bore.....	353	.....	$3\frac{3}{8}"$	
	.....	340	$3\frac{1}{8}"$	
Compression ratio				
L. C. heads.....	353	340	4.92	
H. C. heads.....	353	340	5.05	
Horse power—rated.....	353	.....	36.45	
	.....	340	35.1	
Identification marks.....	353	340	.....	High compression—"H. C." Low compression—no mark.
Piston displacement.....	353	.....	353 cu. in.	
	.....	340	341 cu. in.	
Stroke.....	353	340	$4\frac{1}{8}"$	
CAMSHAFT				
Bearing clearance.....	353	340	New limits, .0027" to .0037" Worn limit, not over .005"	
Bearings out of round.....	353	340	Not over .005"	
End-play in camshaft.....	353	340	New limits, .005" to .015" Worn limit, not over .020"	
CAM SLIDES.....				
				See Note No. 1
CHAINS				
Camshaft chain.....	353	340	Morse-type No. 645.....	A limited number of Diamond chains were also used. See Note No. 10
Adjustment.....	353	340	None	
Number of links.....	353	340	54	
Pitch.....	353	340	$\frac{1}{2}"$	
Width.....	353	340	$1\frac{3}{4}"$	
Generator and water pump drive chain.....	353	340	Morse-type No. B-45.....	A limited number of Diamond chains were also used. See Note No. 10.
Adjustment.....	353	340	$\frac{1}{8}"$ slack measured at top of sprocket housing.....	See Note No. 2
Number of links.....	353	340	57	
Pitch.....	353	340	$\frac{1}{2}"$	
Width.....	353	340	$1\frac{1}{4}"$	
CONNECTING RODS				
Alignment.....	353	340	.....	See Note No. 3
Assembly.....	353	340	.....	See Note No. 4
Center to center length.....	353	340	$10\frac{1}{2}"$	
Clearances				
Bushings and piston pin.....	353	340	.....	See Note No. 5
Lower bearing and crank pin....	353	340	New limits—.001"—.0025" Worn limit, not over .006"	See Note No. 6
End-play—lower bearing.....	353	340	New limits—.006" to .012" Worn limit, not over .015"	

ENGINE

Subject	Cad.	LaS.	Specifications	Remarks
CRANKSHAFT AND MAIN BEARINGS				
Crank pin diameter	353	340	2.3745" to 2.3750"	
Crank pin out of round	353	340	New limit—.0002" Worn limit, not over .004"	
End-play of crankshaft	353	340	New limits—.002" to .004" Worn limit, not over .010"	
Length of crankshaft—overall	353	340	28 $\frac{1}{4}$ "	
Length of crankshaft—front to rear bearing inclusive	353	340	23 $\frac{3}{32}$ "	
Main bearing—clearance	353	340	New limits—.001" to .002" Worn limit, not over .004"	See Note No. 7
Main bearing journal—diameter ...	353	340	2.374" to 2.375"	
Main bearing journal out of round ..	353	340	New limits—.002" Worn limit, not over .005"	
LUBRICATION				
Crankcase capacity	353	340	8 qts.	
Thinning lubricant with kerosene ..	353	340	.....	See lubrication table, page 243
OIL FILTER				
Cartridge	353	340	Type B—3—A.C.	
Cartridge replacement	363	340	Every 12,000 miles	Remove and clean oil pan and screen at same time
OIL PUMP				
Back lash—spiral drive gears	353	340	Not over .018"	
Clearances				
Bushing and drive shaft	353	340	New limits—.001" to .0025" Worn limit, not over .010"	
Idler gear bushing and shaft	353	340	New limits—.001" to .0025" Worn limit, not over .005"	
Pump body and gears	353	340	New limits—.003" to .005" Worn limit, not over .008"	
End-play in pump gears	353	340	New limits—.003" to .008" Worn limit, not over .020"	
End-play in spiral gear on drive shaft	353	340	New limits—.005" to .015" Worn limit, not over .020"	
Gasket—pump cover	353	340	.009"—.011" thick	
PRESSURE REGULATOR				
Adjustment .....	.....	.....	None necessary	
Clearance—plunger and housing ...	353	340	New limits—.003" to .006" Worn limit, not over .008"	
Pressure—normal	353	340	7-10 lbs. idling speed 30 lbs. at 30 M. P. H. }	When oil is warm
Spring—free length	353	340	1 $\frac{3}{4}$ "	
Spring—compression	353	340	2 lbs.—3 oz. at 1 $\frac{5}{16}$ "	
Valve opens	353	340	20 lbs.	

ENGINE

Subject	Cad.	LaS.	Specifications	Remarks
PISTONS—CYLINDERS				
Cylinders out of round.....	353	340	New limit—.0005" Worn limit, not over .002"	
Piston out of round	353	340	New limit—.0005" Worn limit, not over .002"	
Piston clearance at top land	353	340	Not less than .015"	
Piston clearance at skirt.....	353	340	New limit—.003".....	See Note No. 8
Cylinder bore—standard.....	353	.....	$3\frac{3}{8}"$ }	All bores in same block are held within .0005" of each other
		340	$3\frac{5}{16}"$ }	
Cylinder bore—oversize.....	353	340	.....	Oversize cylinders are honed to fit the pistons with which they are supplied
Limits on Pistons				
Standard No. 1.....	353	.....	3.3715" to 3.3720"	Marked "STD. No. 1," etc., measured at bottom of skirt
Standard No. 2.....			3.3720" to 3.3725"	
Standard No. 3.....			3.3725" to 3.3730"	
Standard No. 4.....			3.3730" to 3.3735"	
Standard No. 1.....		340	3.3090" to 3.3095"	
Standard No. 2.....			3.3095" to 3.3100"	
Standard No. 3.....			3.3100" to 3.3105"	
Standard No. 4.....			3.3105" to 3.3110"	
PISTON PINS				
Clearances				
Pin and bushing.....	353	340	.....	See Note No. 5
Pin and piston.....	353	340	Hand push fit on free end; 100 lbs. to 600 lbs. press fit on lock screw end.....	See Note No. 5
Diameter.....	353	340	.8742" to .8750" standard	
Lubrication.....	353	340	Pressure through hole drilled in connecting rod	
PISTON RINGS				
Clearances				
Gap.....	353	340	New limits—.008"—.0018" Worn limit, not over .025"	
Ring and sides of grooves.....	353	340	New limits—.0015" to .0025" Worn limit, not over .004"	
Compression rings.....	353	340	3—above piston pin	
Oil rings.....	353	340	1—below piston pin.....	Install oil rings with chamfer at top
Width of rings.....	353	340	Top compression— $\frac{3}{16}"$ Lower compression—(two) $\frac{1}{8}"$ ea. Oil $\frac{3}{16}"$	
VALVE MECHANISM				
Clearances				
Cam slide and guide.....	353	340	New limits—.0015" to .002" Worn limit, not over .005"	
Cam slide roller and pin.....	353	340	New limits—.0015" to .0025" Worn limit, not over .004".....	Furnished only in complete assemblies of camslide with button, roller and screw

ENGINE

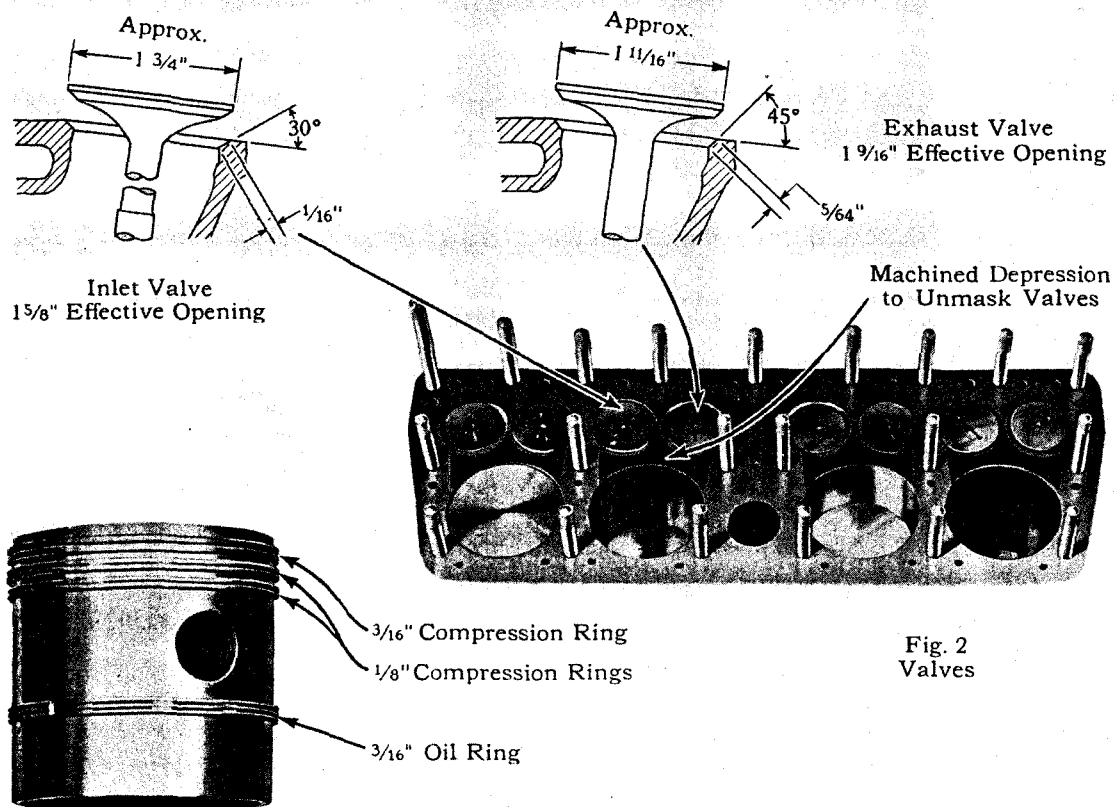
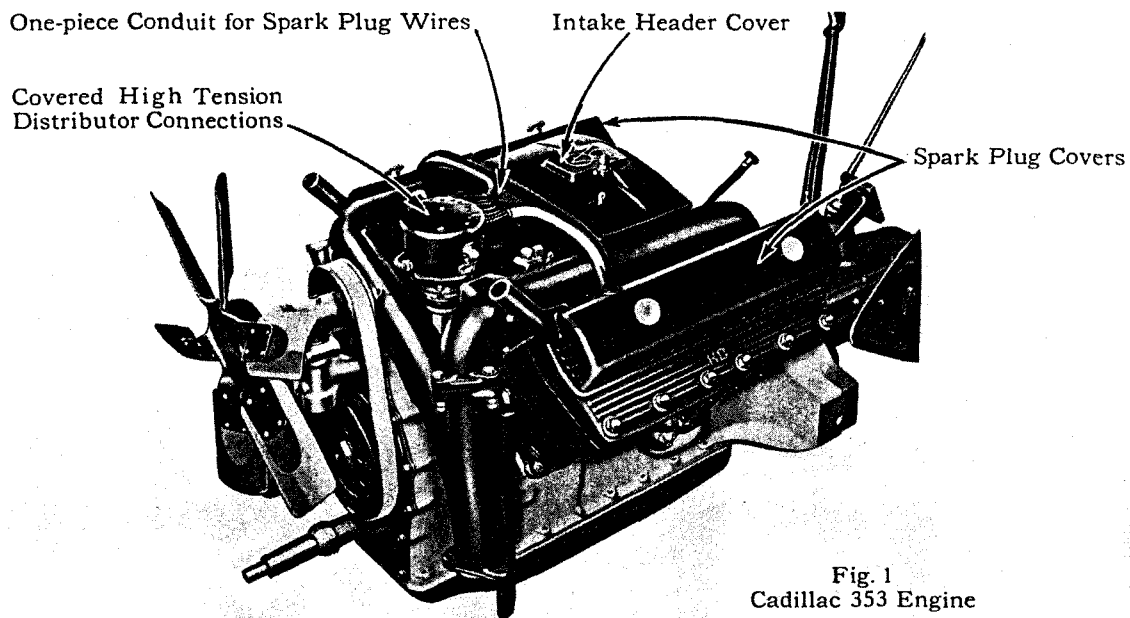


Plate 113. Engine Details
Cadillac 353—La Salle 340

ENGINE

Subject	Cad.	LaS.	Specifications	Remarks
VALVES—EXHAUSTS				
Clearances				
Stem and guide.....	353	340	New limits—.002" to .0045" Worn limit, not over .006"	Adjust while engine is cold. See Note No. 9
Stem and cam slide.....	353	340	.006"—cold.....	
Diameter of head.....	353	340	1.696"—1.702" overall	
Length—overall.....	353	340	6 $\frac{1}{4}$ "	
Lift.....	353	340	$\frac{23}{64}$ "	
Seat angle.....	353	340	45°	
Seat width.....	353	340	$\frac{5}{64}$ "	
Stem diameter.....	353	340	.3705"—.3715"	
VALVES—INLET				
Clearances				
Stem and guide.....	353	340	New limits—.001" to .0035" Worn limit, not over .006"	Adjust while engine is cold. See Note No. 9.
Stem and cam slide.....	353	340	.004" cold.....	
Diameter of head.....	353	340	1.785"—1.791" overall	
Length—overall.....	353	340	6 $\frac{11}{16}$ "	
Lift.....	353	340	$\frac{23}{64}$ "	
Seat angle.....	353	340	30°	
Seat width.....	353	340	$\frac{1}{16}$ "	
Stem diameter—body.....			.3715"—.3725"	
Stem diameter—under head.....	353	340	$\frac{5}{16}$ "	Conical shape
VALVE SPRINGS.....	353	340	.....
Free length.....	353	340	2.835"—2.853"	
Compression.....	353	340	77 to 81 lbs. compressed to 2.5" 156 lbs. to 164 lbs. compressed to 2.148".....	Corresponding to valve closed Corresponding to valve open
VALVE TIMING				
Intake opens.....	353	340	9 $\frac{1}{2}$ ° before top center....	See Note No. 9
Intake closes.....	353	340	58 $\frac{1}{2}$ ° after bottom center.	
Exhaust opens.....	353	340	46° before bottom center	
Exhaust closes.....	353	340	5° after top center.....	

1. Cam Slide Installation

Valve Cam Slides should always be lubricated before installing because if installed dry they are liable to become scored before the oil from the crankcase reaches them.

2. Chain Adjustment

Before adjusting the Pump and Generator drive chain, loosen the water pump mounting screws so that the pump will be free to turn and align itself as the sprocket support is moved.

Plain washers must always be used under the lockwashers on these mounting screws because of the oversize holes in the flange, and also to prevent the mounting screws from bottoming on the chain housing and forcing the sprocket support

away from the housing when drawn up tight enough to hold the pump securely.

3. Connecting Rod Alignment

Always use Tools No. 109214—109215 and 109216 when reaming piston bushings to insure proper alignment between piston pin and lower bearing.

The alignment of Cadillac and La Salle connecting rods by straightening is not recommended as the rod is liable to return to its former shape because of the toughness of the alloy steel used in its construction.

In an emergency, if straightening must be resorted to, the rod is more liable to hold its shape if it is bent a little farther than necessary and then bent back again until it is straight to offset the tendency of the metal to assume its original shape.

ENGINE

4. Assembly of Connecting Rods

When assembling connecting rods to the crank shaft, be sure that the numbers on the rods are towards the bottom of the engine and that they correspond with the numbers of the caps. The chamfered side of the bearing should be next to the crank shaft cheek.

5. Fitting Piston Pins

When pressing pins into or out of piston, always place locking screw side of piston down to prevent forcing piston out of round.

Ream piston pin bushings using tools No. 109214—109215 and 109216. Fit pins dry. Pins should turn freely in bushings with no perceptible play or looseness.

In production, piston pins are a tight press fit in the lock screw side of the piston. It is not expected that this press fit will always be duplicated in service and a snug push fit should be satisfactory.

6. Connecting Rod Clearance

Check clearance in connecting rod bearing with dial indicator (Tool No. 109414).

Do not attempt to adjust connecting rod bearings. If clearance exceeds limits given install new or rebabbitted rod and return old one to factory for exchange. No credit will be allowed on rods if cap or rod has been dressed down.

7. Main Bearing Clearance

Use dial indicator and special fixture (Tool No. 65530) for checking bearing clearances. If bearings are found to be worn

beyond specified limits they should be replaced. Replacement bearings are furnished to exact size and do not require reaming or scraping. No shims or liners are used on the main bearings and no attempt should be made to take them up if worn.

Always install new wooden plugs in grooves in sides of rear main bearing cap to prevent oil leaks around the cap.

8. Piston Clearances

Use Tool No. 119929-T, feeler ribbon with spring scale, for checking piston clearances. Piston must not be over .0005" out of round at skirt. Clearances should be measured between skirt of piston and cylinder wall half way between wrist pin holes with piston half way down on its stroke and wrist pin hole parallel with crank shaft. Both piston and cylinder wall should be clean and free from oil. If the clearance is correct, a pull of 2½ to 5 pounds will be necessary to withdraw the feeler.

9. Valve Adjustment

Valve clearances should be adjusted while the engine is cold. Valves should always be readjusted after tightening cylinder block hold down nuts.

Valve adjustments should be made very carefully. A careless adjustment may cause a variation of 10° in valve timing.

10. Diamond Chains

The Diamond chains used are of the roller type and require a sprocket having three rows of teeth. It is necessary, therefore, to install sprockets of the correct type if a Diamond chain is being used to replace a Morse and vice versa.

Frame

Subject	Cad.	LaS.	Specifications	Remarks	
Length of car—overall.....	353	210 $\frac{5}{8}$ " approx. (140" W. B.).....	Bodies used on 152" W. B. chassis determine their overall length.	
		340	201 $\frac{3}{4}$ " approx.		
Wheelbase.....	353	.....	140 or 152	
		340	134		
Width of car—overall.....	353	75"—140" W. B.		
		340	71 $\frac{3}{8}$ "		
FRAME					
Chassis (unit) number location....	353	340		L. H. side radiator cross member
Side bar depth.....	353	9".....	Measured at deepest part of frame	
		340	8".....		
Side bar thickness.....	353	340	$\frac{5}{8}$ ".....		
Side bar width.....	353	.....	3 $\frac{1}{4}$ " top—2 $\frac{1}{8}$ " bottom	
		340	3" top—2 $\frac{1}{4}$ " bottom..		
Width—front.....	353	31 $\frac{3}{4}$ "		
		340	29"		
Width—rear.....	353	36 $\frac{1}{2}$ "		
		340	36 $\frac{3}{4}$ "		

FRAMES

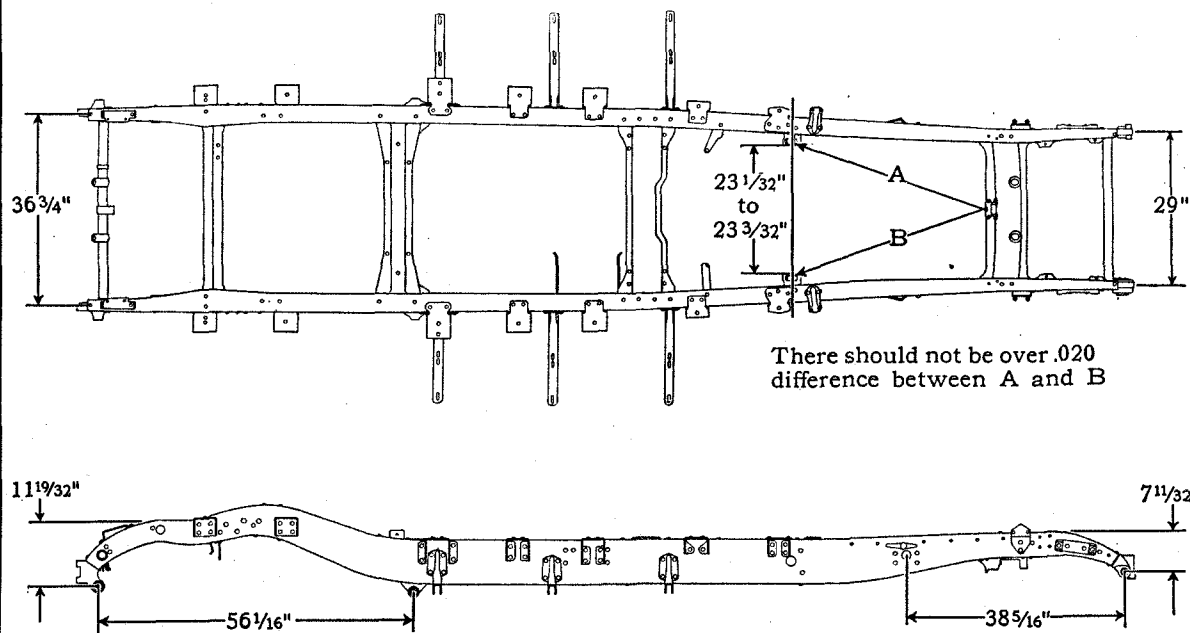


Fig. 1
Frame for LaSalle 340

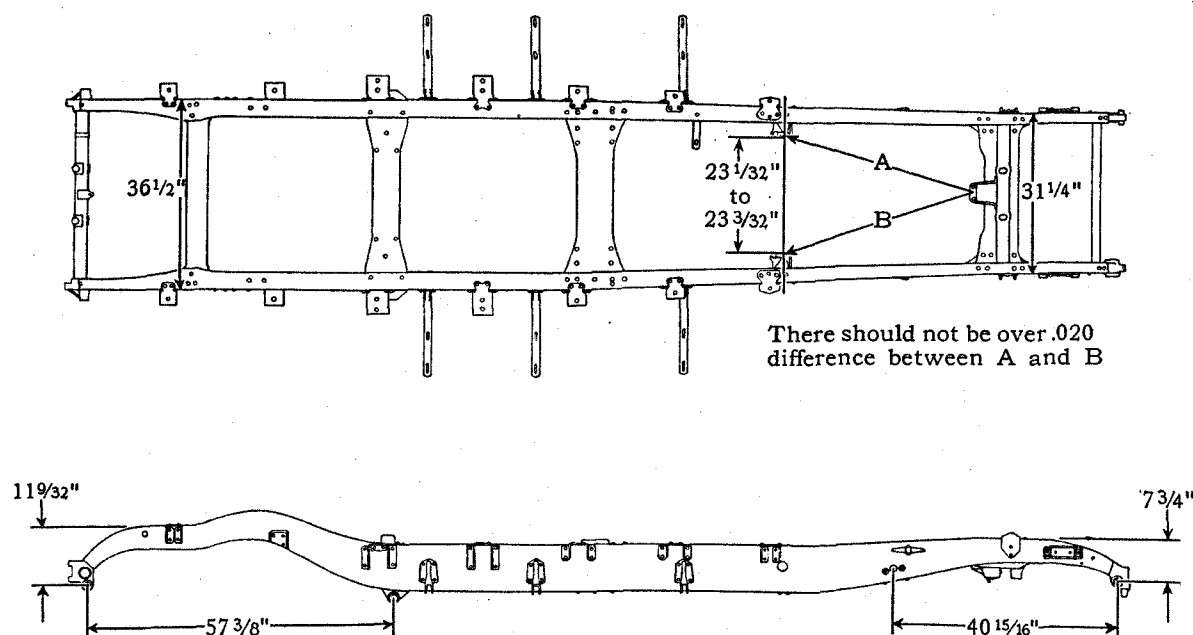


Fig. 2
Frame for Cadillac 353

Gasoline System

Subject	Cad.	LaS.	Specifications	Remarks
Check valve location.....	353	340	On intake header	
Feed.....	353	340	Vacuum with auxiliary vacuum pump	
Gasoline line location.....	353	340	R. H. side of frame	
Gasoline gauge.....	353	340	Electric. (Nagel).....	On instrument panel
Adjustment.....	353	340		See Note No. 1. See Plate 116. Fig. 3.
Tank capacity (supply).....	353	.....	25 gal.	
	.....	340	23 gal.	
CARBURETOR				
Air valve adjustment.....	353	340		See Note No. 2. See Plate 116. Fig. 2.
Clearance—throttle disc and carburetor body.....	353	340	New limit—.003" Worn limit, not over .005"	
Float setting.....	353	340	$\frac{1}{16}$ "	
Size.....	353	340	2"	
Size nozzle.....	353	340	No. 16	
Thermostats				
Air valve—free movement.....	353	340	$\frac{1}{16}$ " to $\frac{3}{32}$ "	
Throttle pump control closes....	353	340	74°F } Inner Thermostat	
Throttle pump control opens....	353	340	78°F }	
Vent control closes.....	353	340	125°F } Outer Thermostat	
Vent control opens.....	353	340	130°F }	
Throttle pump adjusting screw....	353	340		See Note No. 3
Throttle shaft end play.....	353	340	New limit—.0015" Worn limit, not over .005"	
Unit number location.....	353	340	Top front flange at R. H. side	
VACUUM PUMP				
Clearances				
Connecting rod and crank pin on camshaft.....	353	340	New limits—.001"—.003" Worn limit, not over .005"	
Piston and cylinder.....	353	340	New limits—.001"—.0015" Worn limit, not over .003"	

1. Gasoline Gauge Adjustment

If the Gasoline Gauge does not register correctly and the variation from accuracy is the same over the entire scale, a re-adjustment of the float on the tank unit should correct the trouble. The float adjusting screw at the side of the float rod gear is accessible if the tank unit of the gauge system is removed from the tank.

Accurate readings between 0 and 4 gals. should not be expected.

2. Auxiliary Air Valve Adjustment

Make sure air valve has correct amount of free travel before attempting to adjust thermostat. With engine warmed up to normal operating temperature turn adjusting screw clockwise

until engine slows down from a rich mixture. Then turn counter-clockwise, counting the number of notches carefully, until engine slows down from a lean mixture. Now turn screw clockwise just one half the number of notches counted. The accuracy of this method depends upon being able to determine the exact point at which the operation of the engine is affected by the adjustment.

3. Throttle Pump Adjusting Screw

Ordinarily the adjusting screw on the throttle pump should be screwed all the way in so that the by-pass will be closed. However, if high test gasoline is used in the summer time it may be desirable to open the by-pass part way by backing the adjusting screw two or three turns off its seat.

GASOLINE SYSTEM

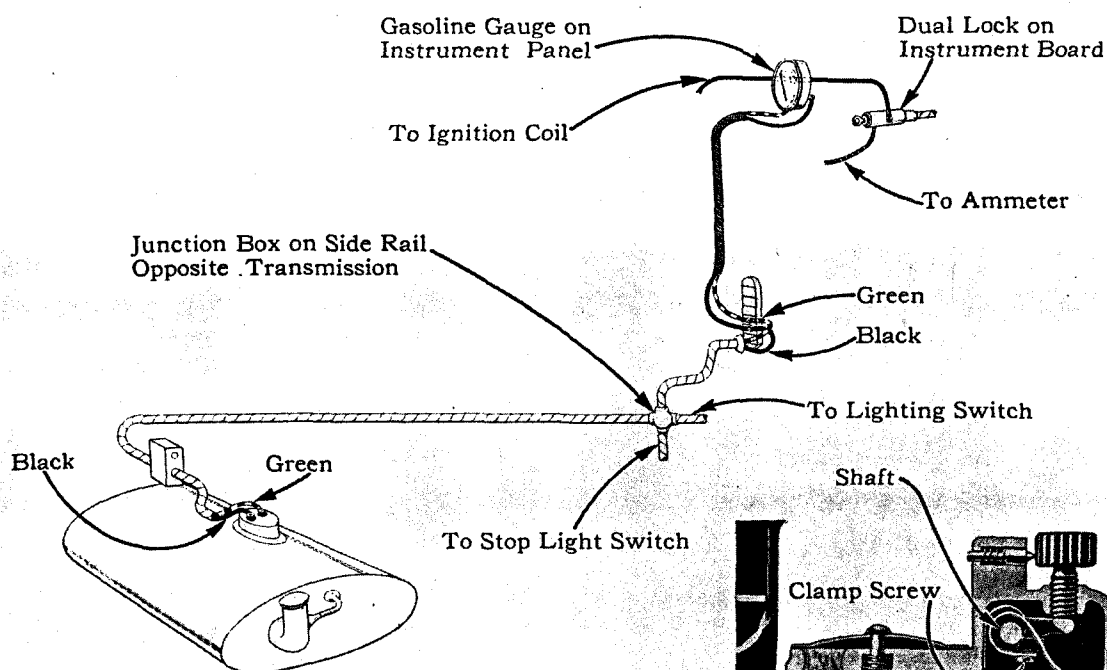


Fig. 1
Gasoline Gauge Wiring System

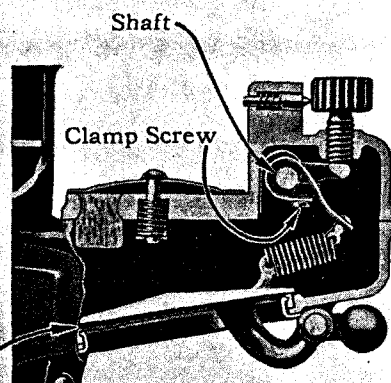


Fig. 2
Auxiliary Air Valve Adjustment
If air valve does not have $\frac{1}{64}$ " to $\frac{3}{32}$ " free movement when control lever is held back against stop, loosen clamp screw and turn shaft slightly. (See Note No.1)

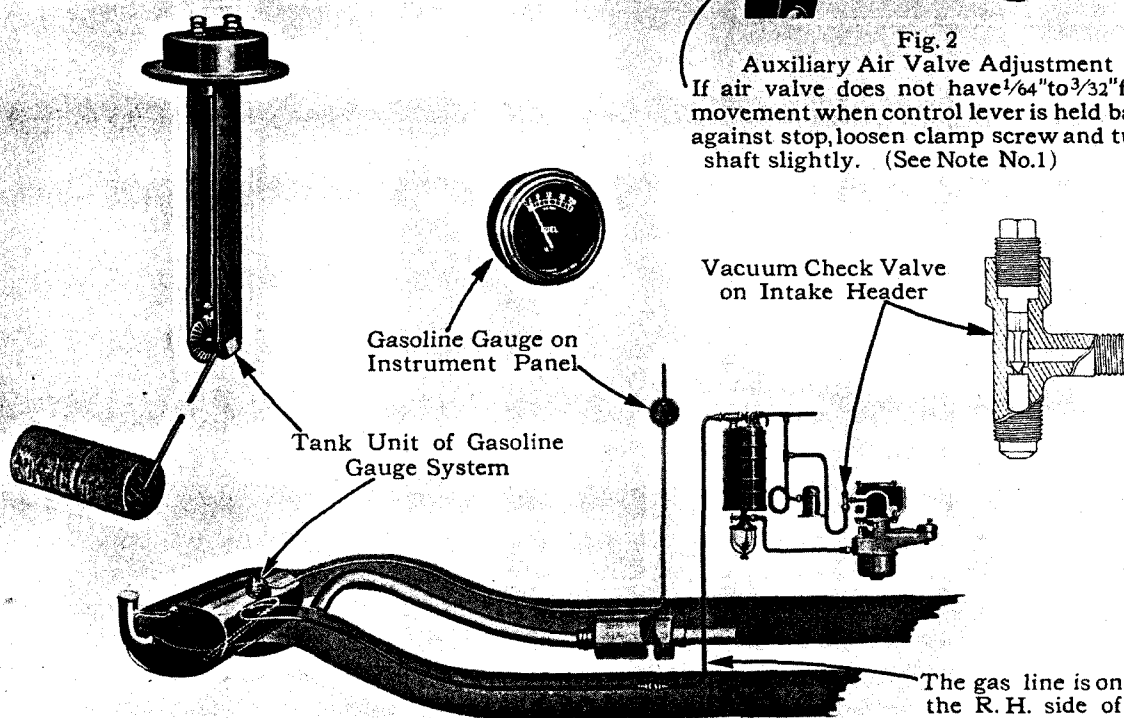


Fig. 3
The Arrangement of the Gasoline System

Lighting System

Subject	Cad.	LaS.	Specifications			Remarks
					Mazda	
Bulb data			C. P.	Contacts	No.	
Dome—closed cars.....	353	340	3	S. C.	63	
Headlamp.....	353	340	21-21	D. C.	1110	
	353	340	32-21	D. C.	1116	Some states permit use of this bulb. See Note 1.
Instrument lamps.....	353	340	3	S. C.	63	
Parking lamp.....	353	340	3	S. C.	63	
Rear quarter lamp.....	353	340	3	S. C.	63	
Running board lamp.....	353	340	3	S. C.	63	
Stop lamps.....	353	340	15	S. C.	87	
Tail lamps.....	353	340	3	S. C.	63	
Trouble lamp.....	353	.....	15	S. C.	87	
Bulb voltage.....	353	340	6-8 volts—all bulbs			
Headlamps						
Cleaning reflector.....	353	340	.....	.....	.....	See Note 2
Connections.....	353	340	.....	.....	.....	See Note 3
Lens diameter.....	353	.....	12"			
		340	10½"			
Overall diameter.....	353	.....	13"			
		340	11"			
Stoplight switch adjustment.....	353	340	Switch in "ON" position with brake lever depressed ¾" to 1"			

1. Headlamp Bulbs

When 21-32 C. P. bulbs are used be sure that the word "TOP" on the base is up when installed.

2. Cleaning Headlamp Reflectors

Great care should be exercised in polishing the headlamp reflectors to preserve the reflecting qualities. A good cleaning paste can be made by mixing rouge or talcum powder with alcohol. Dry lamp black and alcohol are just as satisfactory and may be more convenient. Apply the paste with a clean soft cloth and rub from the center outward in straight lines.

Never polish reflectors with a circular motion because the fine circular lines break up the light rays and appreciably reduce the illumination.

3. Headlamp Connections

The headlamp wires are concealed in the telescoping vertical tube between the lamp and the frame. The upper half of the tube can be pushed down against the spring holding it in place and the plug connector at the bottom of the lamp can then be disconnected. When reconnecting the head lamps be sure the plug is turned the right way so that the lower bulb filament burns when the lighting switch is in the "Bright" position.

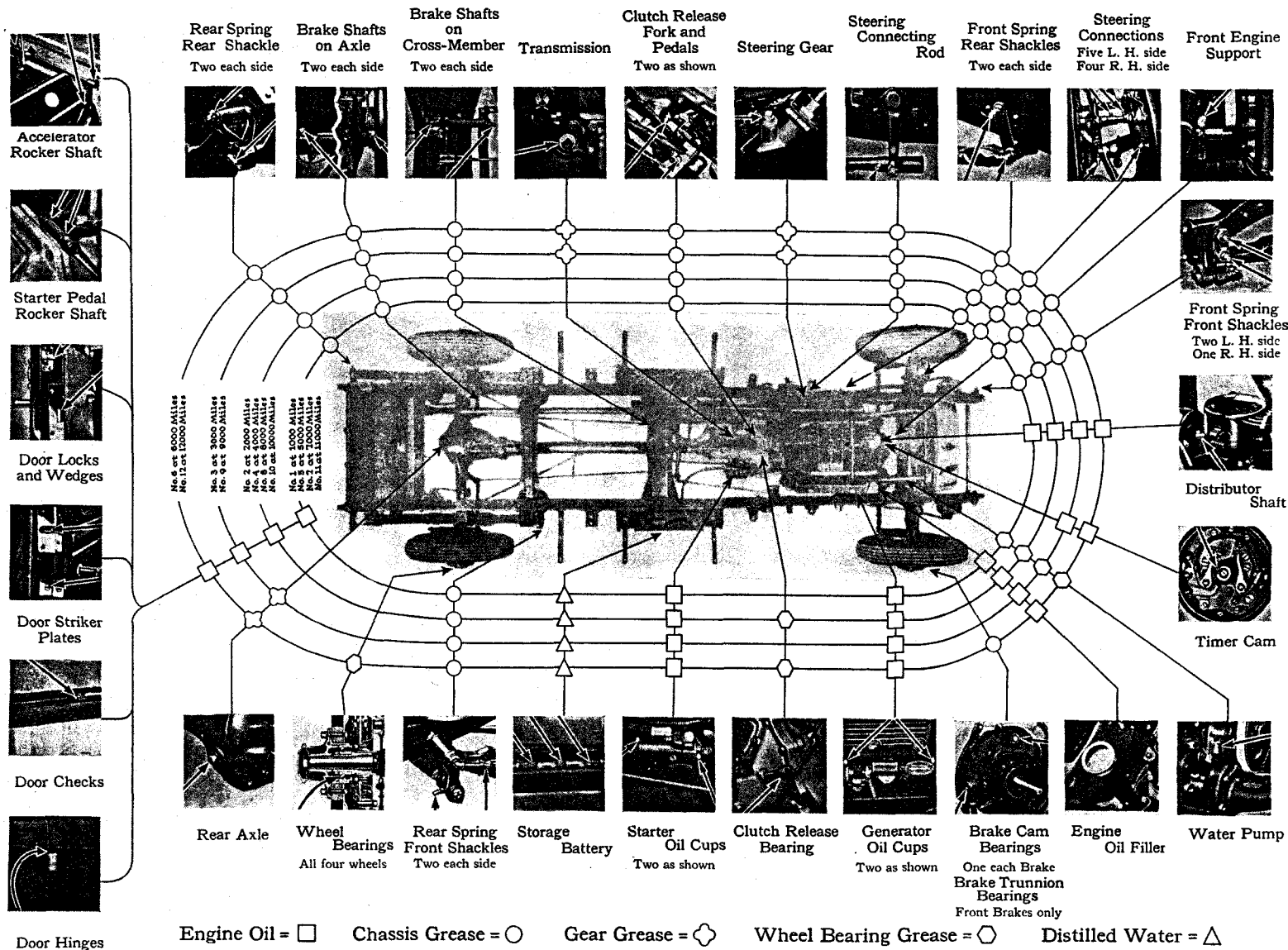
Lubrication

Subject	Cad.	LaS.	Specifications	Remarks
Distributor cam.....	353	340	.....	See Note No. 1
Engine Pressure.....	353	340	7-10 lbs. at idling speed when oil is warm	
Fan.....	353	340	.....	Pressure feed from crankcase
Special items.....	353	340	.....	See Note No. 4
CAPACITIES				
Engine.....	353	340	8 qts.....	See chart below for recommendations
Rear axle.....	353	340	3 qts.....	To overflow level
Transmission.....	353	340	5 pts.....	To overflow level
LUBRICANTS.....				
Chassis lubricants.....	353	340	G-11 (A-200 plus 5% calcium soap)	
Distributor cam.....	353	340	Light engine oil.....	See Note No. 1
Engine oil.....	353	340	.....	See chart below
Gear lubricant.....	353	340	A-200 (viscosity 200 secs. at 210°F)	See Note No. 2
Spring lubricant.....	353	340	G-9 (petroleum jelly)	
Steering gear lubricant.....	353	340	A-200 with 5% graphite.....	See Note No. 3
Water pump grease.....	353	340	G-5 (calcium soap grease consistency 82-145)	
Wheel bearing grease.....	353	340	G-12 (sodium soap grease consistency 250-315)	

ENGINE OIL RECOMMENDATIONS

Type of Service	Summer	Winter		
	All Temperatures Above 32° F.	Between 32° and 15° Above	Between 15° Above and 15° Below Zero	Colder than 15° Below Zero
Average Driving (No prolonged high speed driving)	S. A. E. viscosity 40 or 50	S. A. E. viscosity 20	S. A. E. viscosity 10 or S. A. E. viscosity 20 thinned with 1 qt. kerosene to 7 qts. oil	S. A. E. viscosity 10 thinned with 1 qt. kerosene to 7 qts. oil or S. A. E. viscosity 20 thinned with 2 qts. kerosene to 6 qts. oil
Prolonged High Speed Driving	<p style="text-align: center;">Cadillac Approved "Heavy Duty" Oils—Summer and Winter</p> <p style="text-align: center;">These are oils having an S. A. E. viscosity of 50—60 which are required to meet certain specifications as to volatility in order to demonstrate their fitness for prolonged high speed driving.</p> <p>NOTE: Approved lubricants vary in their suitability for winter use. If an oil with a high pour test is used in winter and the car is not kept in a heated garage, add from one to two quarts of kerosene after a long drive at high speed before the car is stored for the night. Also when draining the crankcase, add from one to two quarts of kerosene to the fresh oil, unless starting immediately on a long trip at high speeds.</p>			

Cadillac 353 Lubrication Chart

Plate 116. Lubrication Chart
Cadillac 353

1. Distributor Cam Lubrication

Remove the distributor cap and rotor every 3,000 miles and apply a few drops of light engine oil at the oil hole in the distributor cam.

2. Thinning Gear Lubricant with Kerosene

Gear lubricant for the transmission and differential need be thinned only at the beginning of cold weather if a sufficient quantity of kerosene is added to take care of the lowest expected temperature. The lubricant for the steering gear should not be thinned.

3. Use of Graphite in Lubricant

The steering gear should be lubricated in the summer with A-200 lubricant. In each case there should be thoroughly mixed with the lubricant 5% by volume of G-20 graphite. Either Acheson No. 38 or Dixon No. 066 may be used.

4. Special Items for Lubrication Diagrams

The following items cannot be placed on the regular 1000-

mile schedule, so they should be performed at the recommended intervals.

Every day—Check level of liquid in radiator.

Every week—Check tire pressure.

Cold Weather—At the beginning of cold weather thin the rear axle and transmission lubricants with kerosene. The engine oil should be drained and replaced with lighter oil as specified or thinned with the proper amount of kerosene.

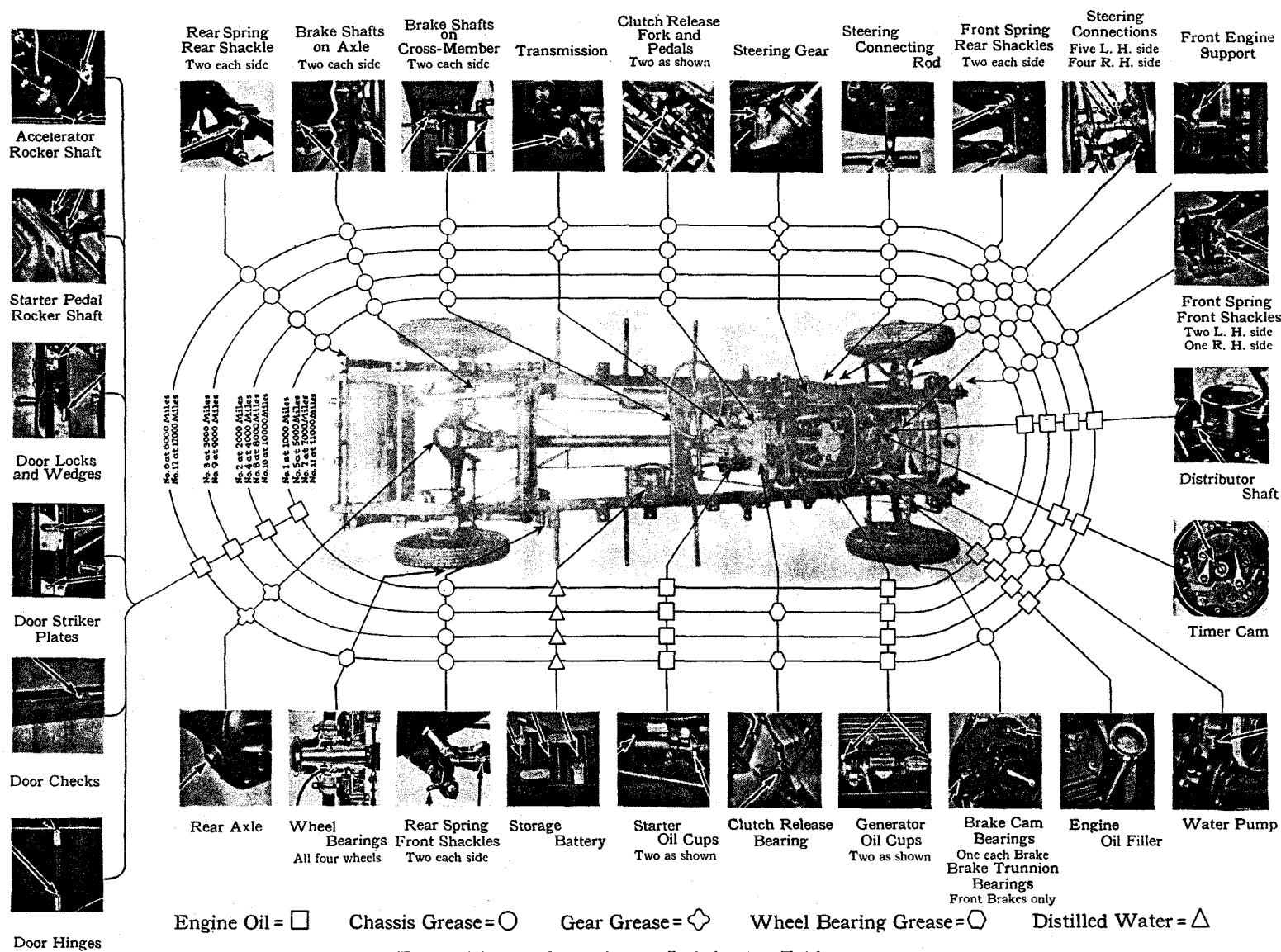
At beginning of warm weather—Drain thinned lubricant and replace with fresh lubricant.

Once each year—Remove spring covers and repack with petroleum jelly.

Every 12000 miles—Check level of special oil in shock absorbers.

Every 12000 miles—Replace oil filter cartridge. Remove and clean engine oil pan and screen at same time.

LaSalle 340 Lubrication Chart

Plate 117. Lubrication Chart
La Salle 340

LUBRICATION

FORM 104-A
SOM 8-29 MCO.

LUBRICATION SCHEDULE

CADILLAC 353, 341A, 341B
LASALLE 340, 328, 303

OWNER'S NAME _____

ADDRESS _____

ENGINE NO. _____

DATE DELIVERED _____

DO NOT WAIT FOR SCHEDULE LUBRICATIONS BEFORE ADDING ENGINE OIL. THE OIL LEVEL SHOULD BE CHECKED EVERY 100 TO 150 MILES AND OIL ADDED IF THE INDICATOR BALL IS BELOW "FULL." THIS IS ESPECIALLY IMPORTANT ON CARS DRIVEN AT HIGH SPEEDS.				LUBRICANT	LUBRICATION NO. AND MILEAGE AT WHICH DUE											
					1 1000	2 2000	3 3000	4 4000	5 5000	6 6000	7 7000	8 8000	9 9000	10 10000	11 11000	12 12000
LUBRICATION NOS. 6 AND 12 LUBRICATION NOS. 3 AND 9 LUBRICATION NOS. 2, 4, 8 AND 10 LUBRICATION NOS. 1, 5, 7 AND 11	ADD LIQUID TO RADIATOR		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	ADD ENGINE OIL AS NECESSARY	ENGINE OIL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	STARTER, GENERATOR AND DISTRIBUTOR OIL CUPS	ENGINE OIL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	FAN (303, 328, 341 ONLY)	ENGINE OIL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	BRAKE PINS AND CONNECTIONS	ENGINE OIL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	DOOR HARDWARE	ENGINE OIL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	SPRING LEAVES (WITHOUT SPRING COVERS)	ENGINE OIL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	GREASE GUN CONNECTIONS	CHASSIS GREASE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	WATER PUMP GREASE CUP	WHEEL BEARING GREASE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	*ADD WATER TO STORAGE BATTERY		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	CHECK TIRE INFLATION		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	DRAIN AND REPLACE ENGINE OIL	ENGINE OIL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	CLUTCH RELEASE BEARING	WHEEL BEARING GREASE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	TRANSMISSION—ADD LUBRICANT	GEAR LUBRICANT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	REAR AXLE—ADD LUBRICANT	GEAR LUBRICANT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	STEERING GEAR—ADD LUBRICANT	GEAR LUBRICANT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	TIMER DISTRIBUTOR CAM (340, 353 ONLY)	LIGHT ENGINE OIL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	FRONT BRAKE TRUNNIONS (ALL CARS) BRAKE CAM BEARINGS (340, 353 ONLY)	CHASSIS GREASE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	WHEEL BEARINGS	WHEEL BEARING GREASE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	SPEEDOMETER DRIVE SHAFT	WHEEL BEARING GREASE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
**REFILL SHOCK ABSORBERS	SPECIAL OIL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
**FLUSH COOLING SYSTEM		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
**REPLACE OIL FILTER CARTRIDGE AND CLEAN OIL PAN AND SCREEN		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			

*IN SUMMER INSPECT BATTERY EVERY 500 MILES OR AT LEAST EVERY 2 WEEKS.

**RECOMMENDED BUT NOT INCLUDED IN LUBRICATIONS 6 AND 12.

THE FOLLOWING OPERATIONS CANNOT BE PLACED ON A MILEAGE BASIS AND ARE NOT INCLUDED IN THE ABOVE SCHEDULE:

THIN REAR AXLE AND TRANSMISSION LUBRICANT—AS REQUIRED FOR LOW TEMPERATURES.
DRAIN AND REPLACE REAR AXLE AND TRANSMISSION LUBRICANT—AT BEGINNING OF MILD WEATHER IN SPRING.

REMOVE SPRING COVERS ONCE A SEASON AND REPACK WITH PETROLEUM JELLY.

RECORD ON OTHER SIDE

Plate 118. Lubrication Record Card
Cadillac 353—La Salle 340

Springs

Subject	Cad.	LaS.	Specifications				Remarks
SHACKLE BOLTS							
Bushings.....	353	340	.....				Furnished in standard and .006" over-size
Clearance—bolt and bushing.....	353	340	New limits—.001" to .004" Worn limit, not over .006"				
Diameter of bolts.....	353	340	.747" to .748"				
SPRINGS							
Arch—under load			Load				
Front.....	353	.....	2 $\frac{1}{8}$ " to 3 $\frac{3}{16}$ "	1050 lbs.	See Note No. 1		
		340	2 $\frac{5}{8}$ " to 2 $\frac{7}{8}$ "	1100 lbs.			
Rear.....	353	.....	1 $\frac{1}{8}$ " to 2 $\frac{1}{16}$ "	See Note No. 2			
		340	2 $\frac{1}{4}$ " to 2 $\frac{1}{2}$ "				
Models and Part Numbers			W. B. Leaves	Load	Part No.		
Front.....	353	.....	140" 10	1050 lbs.	878723		
			152" 10	1050 lbs.	884377		
R. H.....		340	134" 9	1100 lbs.	872754		
L. H.....		340	134" 9	1100 lbs.	872755		
Rear.....	353	.....	140" 9	1275 lbs.	884245	Used on 2-pass. Roadster, 2-pass. Coupe and 2-pass. Convertible Coupe	
			140" 9	1400 lbs.	884243	Used on 5-pass. Town Sedan, 5-pass. Coupe and 5-pass. Standard Sedan	
			140" 10	1500 lbs.	884244	Used on 7-pass. Standard and Imperial Sedans	
			152" 10	1800 lbs.	884246		
Rear.....		340	134" 11	1500 lbs.	872629	Used on 7-pass. Standard and Imperial Sedans	
			134" 10	1225 lbs.	872630	Used on 2-pass. Standard and Convertible Coupes, 5-pass. Coupe and 4-pass. Phaeton	
			134" 11	1350 lbs.	872632	Used on 4-pass. Town Sedan and 5-pass. Sedan	
Width.....	353	.....	2 $\frac{1}{4}$ " front; 2 $\frac{1}{2}$ " rear				
		340	2" front; 2" rear				
SHOCK ABSORBERS.....							
Metering Pins	353	340	Lovejoy two-way				
			Std.	A	B	C	
Front—bumper.....	353	.....	19	19	19	14	Use standard combination for normal speeds on city streets or good country roads
—rebound.....			18	18	18	31	
Rear —bumper.....			14	29	19	14	Use combination "A" for 45 to 50 mile speeds on rough roads
—rebound.....			17	17	18	30	
			Use combination "B" for speeds over 50 miles on rough roads				
Front—bumper.....		340	14	21	29	19	Use combination "C" to secure very easy riding where spring control is a secondary consideration
—rebound.....			31	31	18	31	
			Use combination "C" to secure very easy riding where spring control is a secondary consideration				
Rear —bumper.....			14	29	19	14	See Note No. 2
—rebound.....			30	17	18	30	

SPRINGS

Subject	Cad.	LaS.	Specifications		Remarks
Part numbers.....			Pin No.	Part No.	IMPORTANT! Read note No. 2 before changing metering pins
			14	39314-D	
			17	39317-D	
			18	39318-D	
			19	39319-D	
			29	39129-D	
			30	39130-D	
			31	39131-D	
Relief valves.....	353	340			See Note No. 3
STEERING MODULATOR	353	340			See Steering Gear—Pages 251-252

1. Spring Arch

The Spring arch should be measured from the bushing center line to the surface of the spring seat. Remember that the spring seat is the surface of the axle and is at the bottom of top mounted springs and at the top of underslung springs.

When checking the spring arch on a car, the car should stand level with no passengers in it. The arch can also be measured on springs not installed by inverting the spring on a timber or I-Beam of sufficient length laid across a platform scale. Apply a load by means of a jack braced against a joist or timber above. The load specification for each spring is given opposite "Models, part numbers and loads."

2. Changing Metering Pins

In a case of a hard riding car, always check for tight shackle bolts as a possible cause of the trouble before changing metering pins. Too tight shackle bolts will not only cause

rough riding, but may also result in broken springs.

Never attempt to use shock absorbers with metering pins removed, or the shock absorber is likely to be broken.

High speed driving over rough roads may require different metering pins to insure comfort. The combinations noted should give satisfactory operation under the driving conditions for which they are specified.

3. Relief Valves

Use only the type "J" relief valve on the rebound side.

Type "J" relief valve may also be used on the bumper side to secure easier riding. Still further riding ease may be secured by using type "D" relief valve on the bumper side. Either of these valves in the bumper side will result in the spring bottoming more easily on account of the lessened bumper resistance.

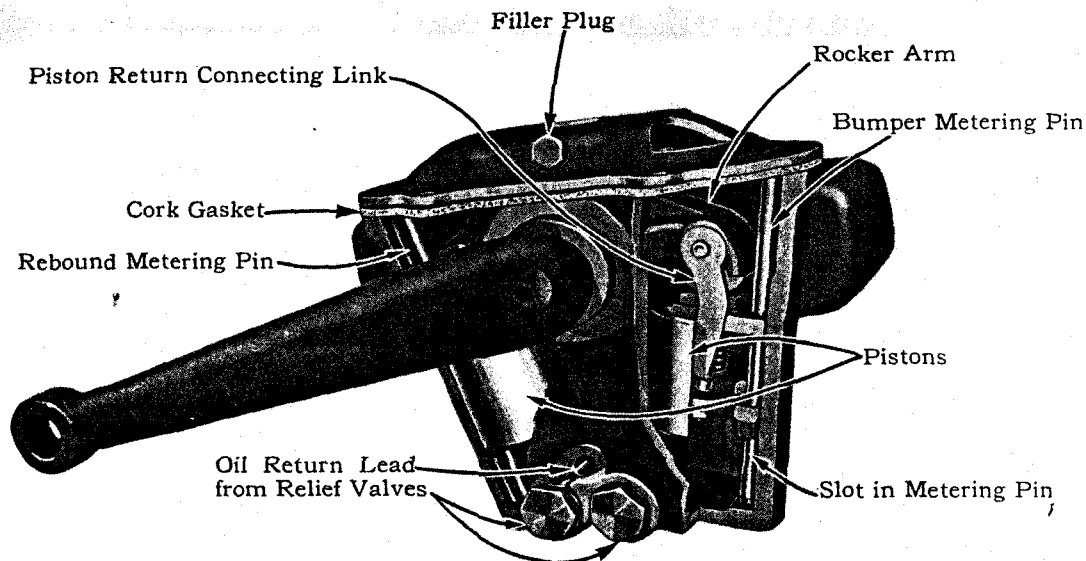


Fig. 3
Cut-away View of Two-way Shock Absorber

Steering Gear

Subject	Cad.	LaS.	Specifications	Remarks
CONNECTING ROD				
Springs				
Compression	353	340	325 lbs. to 400 lbs. at $\frac{1}{8}$ "	
Free length	353	340	1"	
GEAR				
Clearances				
Worm shaft and bushings	353	340	New limits—.002" to .004" Worn limit, not over .006"	
Sector shaft and eccentric bushing	353	340	New limits—.001" to .003" Worn limit, not over .005"	
Unit number location	353	340	Top face of gear housing	
Ratio—total	353	340	16 $\frac{3}{4}$ to 1	Movement of steering wheel to movement of axle spindle in degrees
Turning radius				
Left	353	.....	140" W. B., 24' 7"	Radius of circle swept by outer wall of front tire
		340	134" W. B., 24'	
Right	353	.....	140" W. B., 26' 10"	
		340	134" W. B., 23' 3"	
Wheel Diameter	353	340	19"	
STEERING MODULATOR				
Adjustment	353	340	.....	Tighten nuts only enough to bring them flush with studs. In case of weak or broken springs, install complete set of four new springs.
Springs	353	340	4—part No. 872456	
Free length	353	340	1 $\frac{1}{2}$ "	
Compression	353	340	95 lbs. to 105 lbs at 1 $\frac{3}{16}$ "	

STEERING

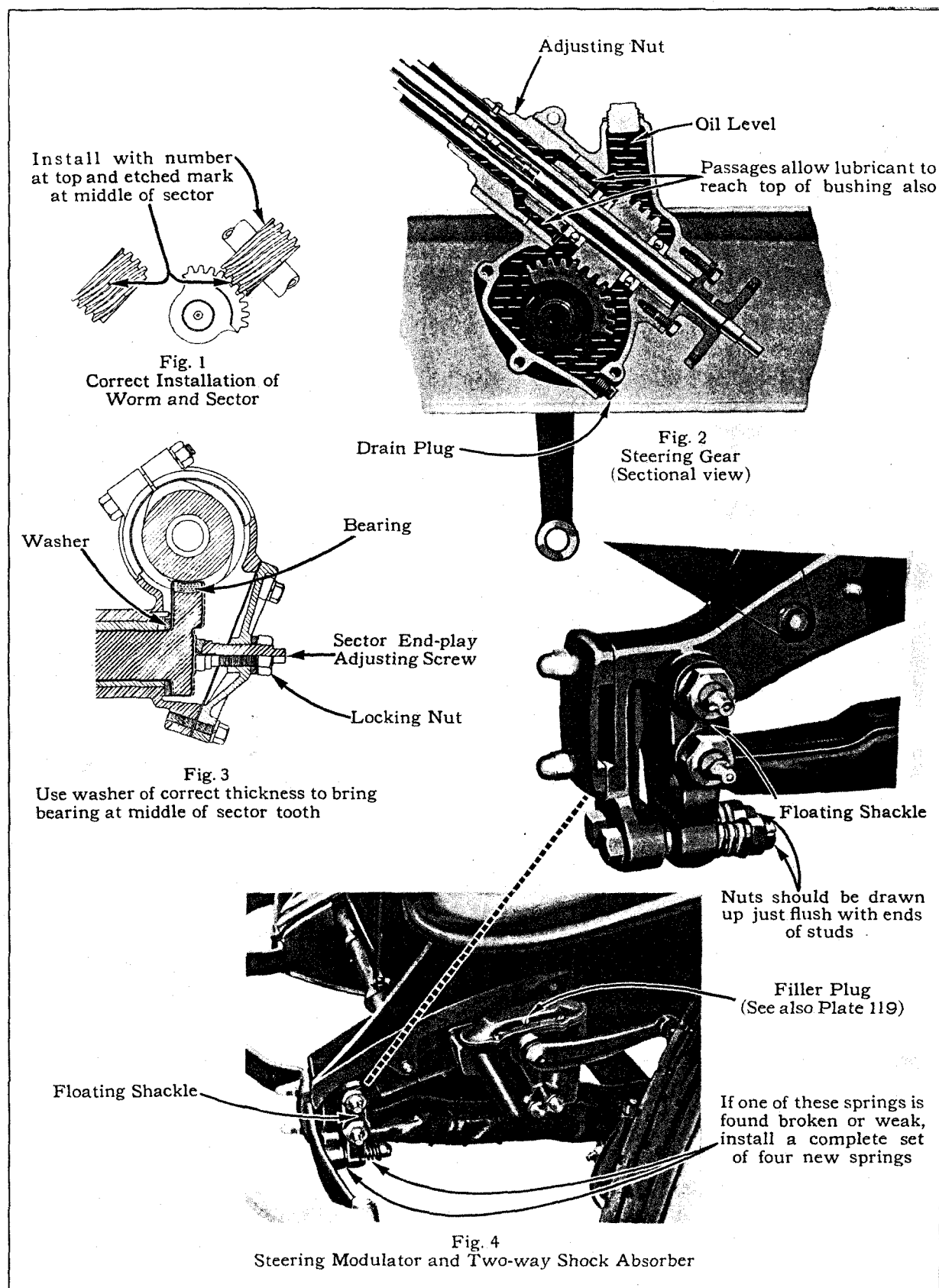


Plate 120. Steering Gear and Steering Modulator
Cadillac 353—La Salle 340

Transmission and Universal Joint

Subject	Cad.	LaS.	Specifications	Remarks
TRANSMISSION				
Gear ratio, low gear.....	353	340	2.966 to 1	
Gear ratio, second gear.....	353	340	1.794 to 1	
Gear ratio, high gear.....	353	340	1 to 1 (direct drive)	
Gear ratio, reverse gear.....	353	340	3.595 to 1	
Lubricant.....	353	340	Chassis lubricant A-200	
Lubricant, amount required.....	353	340	5 pints	
Unit number, location.....	353	340	On center of left flange next to fly-wheel bell-housing	
COUNTER-SHAFT GEAR ASSEMBLY				
End play of gear unit.....	353	340	New limits—.003—.013" Worn limit, not over .025"	
Play in jackshaft bearings.....	353	340	Worn limit, not over .007"	
MAIN SHAFT ASSEMBLY				
Clearances—second speed gear and bushing.....	353	340	New limits—.002—.004" Worn limit, not over .006"	
Splines on main shaft and spline-ways of bushing in second speed gear.....	353	340	New limits—.000—.003" Worn limit, not over .008"	
Splines on main shaft and spline-ways in shifter gears.....	353	340	New limits—.001—.004" Worn limit, not over .005".....	In 341-B and 328 cars, these limits apply only to low-and-reverse shifter gear
Splines on main shaft and spline-ways in sliding gear coupling....	353	340	New limits—.001—.004" Worn limit, not over .005"	
Clutch connection shaft, out of true	353	340	Not over .0025"	
End-play between clutch connection shaft and main shaft.....	353	340	New limits—.004—.008" Worn limit, not over .020"	
Main shaft, out of true.....	353	340	Not over .0025"	
Shake between clutch connection shaft and main shaft.....	353	340	Not over .006"	
REVERSE GEAR ASSEMBLY				
Clearance between reverse pinion shaft and bushing.....	353	340	New limits—.001—.0025" Worn limit, not over .004"	
End-play in reverse pinion	353	340	Worn limit, not over .025"	
Reaming size for reverse pinion bushing.....	353	340	.938—.939"	

TRANSMISSION

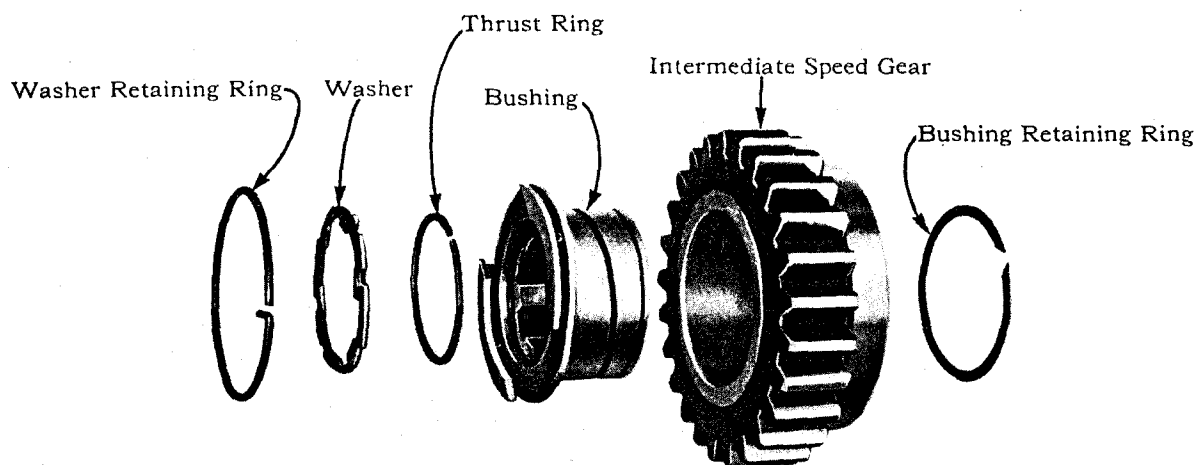


Fig. 1
Intermediate Gear and Bushing

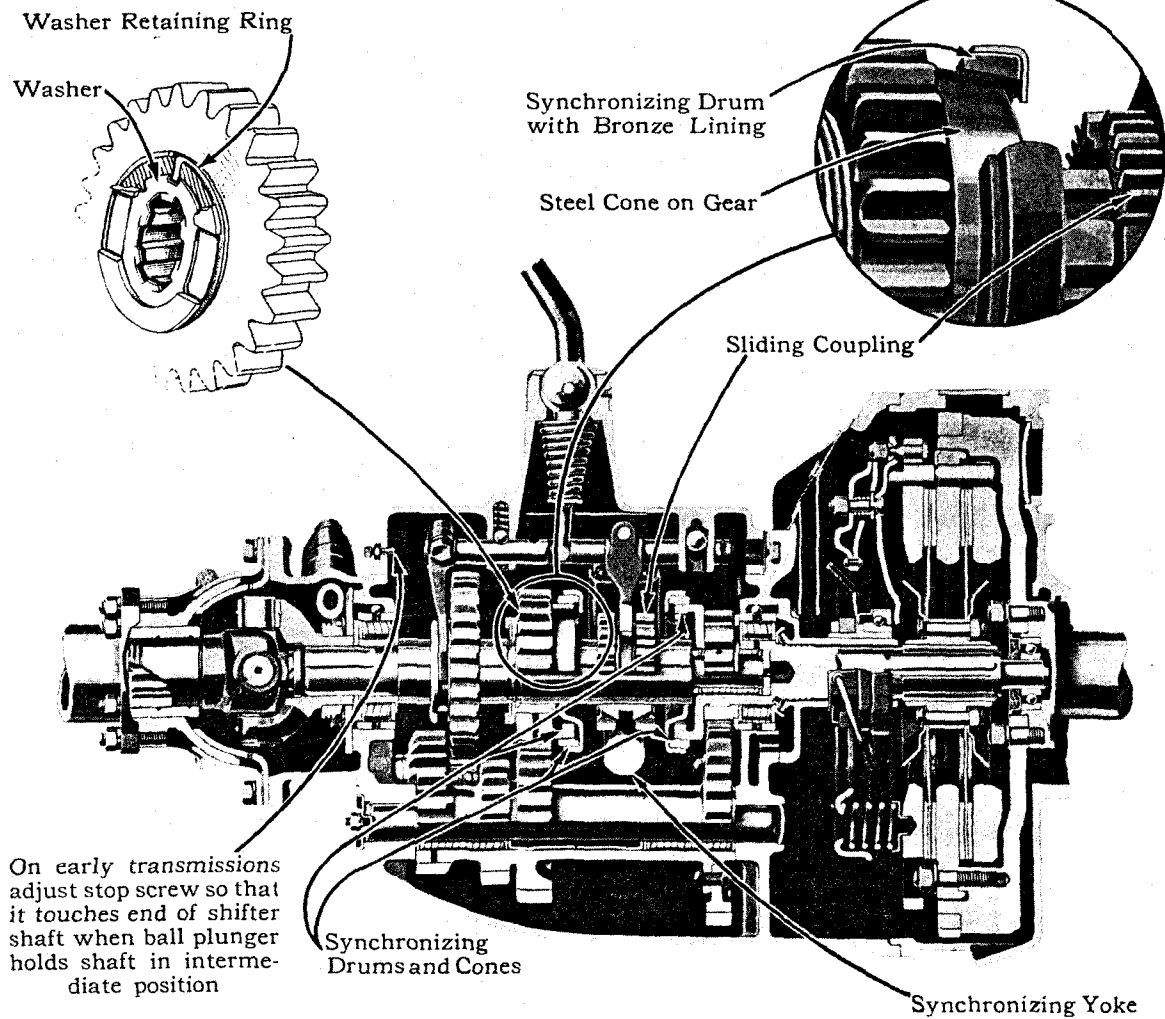


Fig. 2
Sectional View of Transmission and Clutch

TRANSMISSION and UNIVERSAL JOINT

Subject	Cad.	LaS.	Specifications	Remarks																												
SHIFTING MECHANISM																																
Clearance between shifter fork and shifter gear.....	353	340	New limits—.012"—.020" Worn limit, not over .035"	Stop screw used on early transmission covers should just touch shaft when ball-plunger holds shifter in intermediate																												
Shifter shaft lock spring, free length	353	340	1 $\frac{3}{16}$ ", approximately																													
Shifter shaft lock spring, compression.....	353	340	20-23 lbs. at $\frac{3}{4}$ "																													
Stop screw.....	353	340																													
YOKE ASSEMBLY																																
Clearances																																
Guide block and drum.....	353	340	New limits—.002"—.006" Worn limit, not over .010"	Measured at top of transmission case. Plate 56. Fig. 5.																												
Plunger and yoke bore.....	353	340	New limits—.001"—.003" Worn limit, not over .005"																													
Plunger main spring																																
Free length.....	353	340	1 $\frac{1}{4}$ " approximately																													
Compression.....	353	340	24-26 lbs. at $\frac{9}{16}$ "																													
Plunger valve spring																																
Free length.....	353	340	$\frac{5}{8}$ " approximately																													
Compression.....	353	340	2 $\frac{3}{4}$ -3 $\frac{1}{4}$ lbs. at $\frac{1}{16}$ "																													
Yoke return springs																																
Free length.....	353	340	$\frac{3}{4}$ " approximately																													
Compression.....	353	340	14-16 lbs. at $\frac{1}{16}$ "																													
Yoke throw from neutral to applied position.....	353	340	New limits— $\frac{1}{8}$ "— $\frac{3}{16}$ " Worn limit, not over $\frac{1}{4}$ ".....																													
SPEEDOMETER GEARS																																
Driving gear.....	353	340	7-tooth, part No. 848176 No.	<table><tr><th>Part No.</th><th>Rolling radius</th></tr><tr><td>878208</td><td>14 $\frac{5}{16}$" to 14 $\frac{11}{16}$"</td></tr><tr><td>848122</td><td>14 $\frac{11}{16}$" to 15 $\frac{3}{4}$"</td></tr><tr><td>848178</td><td>15 $\frac{3}{4}$" to 16 $\frac{3}{4}$"</td></tr><tr><td>848124</td><td>14 $\frac{7}{8}$" to 15 $\frac{7}{16}$"</td></tr><tr><td>848123</td><td>15 $\frac{7}{16}$" to 16 $\frac{1}{4}$"</td></tr><tr><td>848125</td><td>15 $\frac{1}{8}$" to 15 $\frac{13}{16}$"</td></tr><tr><td>848124</td><td>15 $\frac{13}{16}$" to 16 $\frac{1}{8}$"</td></tr><tr><td>876374</td><td>15 $\frac{7}{16}$" to 16 $\frac{1}{4}$"</td></tr><tr><td>848178</td><td>14 $\frac{5}{8}$" to 15 $\frac{7}{16}$"</td></tr><tr><td>848123</td><td>14 $\frac{11}{16}$" to 15 $\frac{1}{2}$"</td></tr><tr><td>848122</td><td>15 $\frac{1}{2}$" to 16 $\frac{1}{16}$"</td></tr><tr><td>848125</td><td>14 $\frac{3}{4}$" to 15 $\frac{5}{16}$"</td></tr><tr><td>848124</td><td>15 $\frac{5}{16}$" to 16"</td></tr></table>	Part No.	Rolling radius	878208	14 $\frac{5}{16}$ " to 14 $\frac{11}{16}$ "	848122	14 $\frac{11}{16}$ " to 15 $\frac{3}{4}$ "	848178	15 $\frac{3}{4}$ " to 16 $\frac{3}{4}$ "	848124	14 $\frac{7}{8}$ " to 15 $\frac{7}{16}$ "	848123	15 $\frac{7}{16}$ " to 16 $\frac{1}{4}$ "	848125	15 $\frac{1}{8}$ " to 15 $\frac{13}{16}$ "	848124	15 $\frac{13}{16}$ " to 16 $\frac{1}{8}$ "	876374	15 $\frac{7}{16}$ " to 16 $\frac{1}{4}$ "	848178	14 $\frac{5}{8}$ " to 15 $\frac{7}{16}$ "	848123	14 $\frac{11}{16}$ " to 15 $\frac{1}{2}$ "	848122	15 $\frac{1}{2}$ " to 16 $\frac{1}{16}$ "	848125	14 $\frac{3}{4}$ " to 15 $\frac{5}{16}$ "	848124	15 $\frac{5}{16}$ " to 16"
Part No.	Rolling radius																															
878208	14 $\frac{5}{16}$ " to 14 $\frac{11}{16}$ "																															
848122	14 $\frac{11}{16}$ " to 15 $\frac{3}{4}$ "																															
848178	15 $\frac{3}{4}$ " to 16 $\frac{3}{4}$ "																															
848124	14 $\frac{7}{8}$ " to 15 $\frac{7}{16}$ "																															
848123	15 $\frac{7}{16}$ " to 16 $\frac{1}{4}$ "																															
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876374	15 $\frac{7}{16}$ " to 16 $\frac{1}{4}$ "																															
848178	14 $\frac{5}{8}$ " to 15 $\frac{7}{16}$ "																															
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848122	15 $\frac{1}{2}$ " to 16 $\frac{1}{16}$ "																															
848125	14 $\frac{3}{4}$ " to 15 $\frac{5}{16}$ "																															
848124	15 $\frac{5}{16}$ " to 16"																															
Driven gear			Gear ratio of teeth																													
(7:00 x 19 tires).....	353	340	4.39 to 1 21																													
			20																													
			19																													
			4.75 to 1 22																													
			21																													
			5.08 to 1 23																													
			22																													
			4.07 to 1 18																													
			19																													
			4.54 to 1 21																													
			20																													
			4.91 to 1 23																													
			22																													
SPEEDOMETER SHAFT																																
Length.....	353	56 $\frac{7}{8}$ "	See Note No. 1																												
	340	49 $\frac{3}{8}$ ".....																													

TRANSMISSION and UNIVERSAL JOINT

Subject	Cad.	LaS.	Specifications	Remarks
UNIVERSAL JOINT				
Ball and socket joint adjustment...	353	340	Remove gaskets until friction can be felt in joint, then add one gasket	
Ball member bushing assembly....	353	340	Oil grooves must cross on right side and open toward top and bottom of ball	
Clearance between crosses and bushings.....	353	340	New limits—.0025"—.004" Worn limit, not over .006"	
Clearance between yoke and ball member bushing.....	353	340	New limits—.005"—.007" Worn limit, not over .010"	

1. Installation of Cable Flange

Two different distances between centers of driving gear and driven gear are used; one for pinions with 16 to 19 teeth and one for pinions with 20 to 23 teeth. To make this possible, the end of the speedometer cable is eccentric. In one position the cable gives the correct center distance for pinions with 16 to 19 teeth. When revolved 180° the cable gives the correct center distance for pinions with 20 to 23 teeth. The flange of the cable end has the figures "16-19" on one side and "20-23" on the other side. The cable should always be turned so that the figures corresponding to the number of teeth on the pinion are at the top.

2. Determining Correct Speedometer Gear by Rolling Radius

There are occasionally owners who desire to install on their cars tires of a different make from standard, or tires of special

sizes. Any change in the make or sizes of the tires affects the speedometer reading and, in many cases, a new speedometer gear will be necessary.

It is impossible to specify the correct gear merely from the nominal size of the tire. Tires of various makes differ. It is necessary to know the "rolling radius" in order to determine the correct speedometer gear.

To find the rolling radius of any tire, simply measure the distance from the center of the hub cap of a rear wheel to the pavement.

Before doing this, however, make sure that the tires are inflated to the normal pressure of 40 pounds and that the car is weighed down to its normal load.

Once the rolling radius is known, the correct gear can be determined by referring to the specification table.

Wheels, Rims and Tires

Subject	Cad.	LaS.	Specifications	Remarks
BEARINGS				
Front—adjustment.....	353	340	.....	See Note No. 1
Rear—adjustment.....	353	340	.....	None
RIMS AND WHEELS				
Brake drums out of round.....	353	340	Not over .007" indicator reading..	Check with drum mounted
Felloe—out of true radial or lateral	353	340	Not over $\frac{1}{16}$ "	
Rim size.....	353	.....	19"	
		340	19" demountable rim wood wheels only	
			18" wire, disc and demountable wood wheels	
TIRES				
Balancing mark location.....	353	340	Should be placed in line with valve stem	
Pressure.....			Normal	High Speed
Front.....	353	340	45	50
Rear.....	353	340	40	50
Size.....	353	.....	7.00" x 19"	
		340	6.50" x 19" (19" rims)	
			7.00" x 18" (18" rims)	

1. Front Wheel Bearing Adjustment

When adjusting front wheel bearings, first make sure the wheel is all the way on. Then turn the adjusting nut up by hand as far as possible and back it off to the second cotter pin slot.



LASALLE
Series 345-V-8
Color
Combinations

SEPTEMBER
OCTOBER
1930

CADILLAC MOTOR CAR COMPANY

OPTIONS

Color combinations 7, 13, 22, 27 and Black are optional on all La Salle Body styles.

Color combinations 8 and 12 are optional for open cars, Convertible Coupes, and 2-Passenger Coupes in addition to the five standard options.

Combination 7 and 8 when specified for stationary top models roof will be Black.

Standard extra charges apply to the colored fenders supplied with combinations 7 and 8 but on request Black fenders will be furnished without charge.

UPHOLSTERINGS

Closed Body Styles

3T131	Grey Mohair
5T131	Taupe Mohair
7T131	Taupe Broadcloth
16T131	Grey Whipcord <small>Optional—</small>
32T131	Taupe Whipcord <small>Convertible Coupe</small>
34T131	Blu-Grey Broadcloth <small>All Weather Phaeton</small>

Open and Convertible Body Styles

1T1331	Brown Leather
2T1331	Green Leather
3T1331	Black Leather
4T1331	Grey Leather

LASALLE



Combination 7

Lower Panels, Window Reveals—
Brummel Brown, Duco 2445912.
Rear Quarters, Upper Panels, Mouldings, Fenders, Chassis—Hazelwood Brown Light, Duco 2446067.
Stripe—Tokio Ivory, Duco 2885757.



Combination 8

Lower Panels, Window Reveals, Rear Quarters—Scaraba Green, Duco 2445679.
Upper Panels, Mouldings, Fenders, Chassis—Arizona Grey, Duco 2446101.
Stripe—Pastel Cream, Duco 2883853.



Combination 12

Lower Panels, Window Reveals—
Sarasota Blue, R-M 20297.
Remainder Body—Black.
Stripe—Tokio Ivory, Duco 2885757.



Combination 13

Lower Panels, Window Reveals—
Cambray Green, R-M 20391.
Remainder Body—Black.
Stripe—Tokio Ivory, Duco 2885757.



Combination 22

Lower Panels, Window Reveals—
Afghan Maroon, Duco 2446172.
Remainder Body—Black.
Stripe—Eng. Verm., Duco 2884182.



Combination 27

Lower Panels, Window Reveals—
Jefferson Blue, Duco 2446125.
Remainder Body—Black.
Stripe—Avignon Blue, R-M 20267.

All Black; Stripe—Tokio Ivory 2885757.
Optional on all Body Styles.

PAGE 1.

In the following pages, we will describe the new cars of the Cadillac 353 and LaSalle 340 series, as presented at the Distributors' Convention.

The general specifications of the cars together with detailed equipment are listed.

The number assigned to each of the specifications corresponds with the number on the tag of each car and may be used for convenience in ordering duplicates of any of the jobs shown. Duplicates of non-production jobs will be available for September delivery.

DISTRIBUTORS CONVENTION

AUGUST 12 - 15th, 1929.

GENERAL INFORMATION COVERING
COMPLETE CADILLAC AND LASALLE LINES

While we wish to discuss the three distinct divisions, Cadillac, LaSalle and Fleetwood of our production in detail in the following pages, there are certain features applicable to the complete lines.

Wheels & Axle Ratios

The Cadillac line this year will have standard wood wheels, with the conventional carrier on the rear for the spare. The wheels will be 19" and the tire size 7.00-19. This year, we are offering a demountable wood wheel, finished in natural color in two styles, either carrying a single wheel on the rear, or with fender well equipment. When these demountable wood wheels are specified in the color of the car, they will have to be ordered as "special", otherwise, we shall consider orders specifying demountable wood wheels to be a natural finish. The wire and disc wheels will be finished, either with single carrier on the rear, or with fender wells. No provision has been made for production to furnish the carrier for two wheels on the rear. At a later date, it is possible that we shall be able to supply some sort of an adapter through the Parts Department.

The axle ratios available on Cadillac are standard 5.08-1. Unless otherwise specified, this will be used on all models, with the exception of Roadsters, Two Passenger Coupes and Convertible Two Passenger Coupe types, where the optional gear ratio of 4.75-1 is used. Under no consideration should 4.75-1 be specified on either the Five or Seven Passenger Sedan types.

The LaSalle line this year will have two sizes of wheels and tires. The standard wood, with the conventional type carrier, will be a 19" wheel and take a tire of 6.50-19. All other types of wheel equipment on LaSalle will be 18" and take tire 7.00-18. As in the past, only United States tires will be offered on the LaSalle line. As in the Cadillac, we are prepared to supply demountable wood wheels, with the spare on the rear as well as fender wells. Wire and disc will be available with the spare on the rear or two spares with fender wells. No provision has been made for the carrying of two spares on the rear. If we are able to offer a special adapter at later date on Cadillac, it will also be available for LaSalle.

The standard gear ratio will be 4.54-1 for all models, with the exception of the Seven Passenger Sedan and Seven Passenger Imperial, which we would recommend be equipped with 4.91-1. These axle ratios should apply almost universally with the exception of the few localities where there is considerable mountain travel, or added power required. For high speed work, we have released a 4.00-1 to be supplied only on the Roadster, Phaeton, Two Passenger Coupe and Convertible Coupe.

SPECIAL EQUIPMENT AND PAINT PRICES

We have been unable to revise our list of accessories, painting, and upholstery prices in sufficient time for this book. The same policies we have pursued in the last year regarding prices, will apply until such time as a new bulletin can be issued. The price list of cars will include the extra charges for wheel equipment.

CADILLAC COLOR POLICIES
(Fisher Line)

We shall release each month the color combinations to be used as standard production. The policy of allowing special colors on lower panels and window offsets with standard Black parts will be continued without extra charge. Where combinations are offered in production with painted fender sets the usual charge of fifty dollars list (\$50.00) will apply. On special orders with non production colors the extra charges of last year for such features as roof and rear quarters, upper panels, mouldings, fenders and chassis will be continued. To facilitate production and selling we have prepared a pamphlet containing color chips and a concise description of color distribution of all color combinations now standard.

Each color combination is numbered combination 1, 2, 3, etc. Therefore in ordering cars it will be satisfactory to specify the combination number as shown above the color combination.

The various body styles have been segregated into two groups, one group consisting of the Convertible 2-Passenger Coupe, standard 2-Passenger Coupe and Town Sedan will be known as Sport Type group. The second group or Conservative Type group comprises the five passenger coupe, five passenger sedan, seven passenger sedan and seven passenger Imperial sedan. Color combinations offered on the Sport Type group can be had on the Conservative Type group or vice versa, on order only.

As standard colors are changed a pamphlet containing a new lineup of all standard colors will be furnished gratis, to all distributors in limited quantities.

The color pamphlet will also contain color chips and concise description of color distribution of any special color combinations which may be offered from time to time.

Specifications received wherein the distributor specifies colors not guaranteed for durability by the manufacturer will be rejected. We will, however, accept such orders for shipment in primer finish thus enabling the distributor to arrange locally to finish the car in any nondurable colors for which he may receive orders.

When color combinations offered as standard are discontinued it is agreed the factory will fill orders for such colors under the conditions originally offered.

TRIMMING OPTIONS

These include 4 mohair materials of the highest quality, 1 Bedford cord cloth, and 3 bellflower patterned broadcloths with plain headlining, numbered as follows:

- 24 T 129 / Brown with darker brown bellflower pattern / broadcloth.
- 26 T 129 / Gray with blue bellflower pattern / broadcloth.
- 28 T 129 / Tan with green bellflower pattern / broadcloth.
- 50 T 128 / Gray / Bedford cord.
- 19 T 129 / Blue mohair.
- 51 T 128 / Silver gray mohair.
- 63 T 128 / Taupe mohair
- 67 T 128 / Green gray mohair

In addition to the choice of these trimmings, 2 passenger Convertible Coupes are furnished in four leathers options to be known as standard blue, standard tan, standard green, standard black, also 50 T 128 gray Bedford cord is offered optional in this body style.

Method of trimming is pleated and tufted. All door pockets are eliminated. Pleated and tufted method of trimming is also standard in the 2 passenger Convertible Coupe. Full width auxiliary seats are furnished in all 7 passenger body styles.

New upholstery samples will not be sent to the distributors as there have been no changes made. Samples distributors now have they may continue to use.

CLOSED BODY STYLES

General specifications of all closed body styles are as follows:

All body styles have the full front seat equipped with adjustable seat features. Adjustable seat feature in the 5-Passenger Coupe effects the driver's seat only. There is no adjustable seat feature in the Imperial 7-Passenger Sedan.

VANITY CASES

The 2-Passenger Coupe and Convertible 2-Passenger Coupe have an ash receiver in the right front door only. All other body styles have combination Pas-a-lite lighter and ash tray in one case, the lady's case containing ash tray, memo book, pencil and mirror.

While special leather can be furnished, subject to extra charge their use should be discouraged because of the generally unsatisfactory results obtained. It should be understood that the factory accepts no responsibility for any such leathers furnished, either for wearing qualities or fastness of color.