NEW PACEMAKER SERIES

Design,
Construction,
Equipment
FEATURES

NOTE: The Hudson Motor Car Company reserves the right to make any changes or improvements on its products without incurring any liability or obligation whatever, and without being required to make any corresponding changes or improvements on products theretofore manufactured or sold.

ENGINE—New Pacemaker
High-compression, 6-cylinder, L-head type. Develops 112 H.P.
Bore: 3½ inches
Stroke: 3½ inches
Displacement: 232 cubic inches
Compression Ratio: 6.7 to 1. (With optional aluminum head, 7.2 to 1.)
Full pressure lubrication.
Dual-jet, triple-range, down-draft carburetion.
Moisture-resistant ignition system, for high-compression performance.

HIGH COMPRESSION
The new Pacemaker engine is designed to permit higher compression ratios whenever higher-octane gasoline is available. Most competing engines are designed for ordinary gas, and must be completely redesigned to do this. Hudson's years-ahead engine design makes the most efficient and economical use of the fuels now available, and can be stepped up to higher compression ratios when super-high-octane fuels are available.

SIX CYLINDERS—and Why
The new Pacemaker uses the world's most popular type of power plant; there are more Sixes on the road than any other kind of engine. The power output is very high, with great gas and oil economy. Upkeep costs are relatively low, while performance is smooth and alert at all speeds.

L-HEAD DESIGN—Advantages
With all the valves on one side, fewer moving parts are needed to operate them. This eliminates noise, reduces wear, simplifies maintenance, and insures good lubrication at all times.

HORSEPOWER—For Safety and Performance
The Pacemaker's engine rating of 112 brake horsepower is higher than that of any other Six or Eight of equal price. At normal driving speeds, this extra power is not in use, and the engine costs no more to operate than engines of lesser ratings. But in an emergency, where power to pull out of a tight spot fast may avert danger, the Pacemaker's reserve power acts instantly to whip car and driver out of trouble. Or it will give brilliant pickup at ordinary times. Only two six-cylinder engines in the field develop more horsepower than the Pacemaker, and both are in higher-priced cars—one of them the Hudson Super-Six!

BORE and STROKE—Their Importance
The diameter of the cylinder is the bore; the distance the piston travels up and down is the stroke. The Pacemaker's relatively large bore of 3½ inches and short stroke of 3½ inches are typical high-compression features. You use present-day fuels with the utmost efficiency and economy; shorter piston travel and comparatively slower engine speed mean less engine wear, less heat loss through cylinder walls, and real savings in fuel and upkeep.

PISTON DISPLACEMENT—Its Meaning to Owners
Displacement is the volume of space in the cylinder between the lowest and highest points reached by the piston. When judged in comparison to power output of the engine, it is a definite indication of efficiency—a big factor in operating economy. The Pacemaker's power output of 112 H.P., with only 232 cubic inches of piston displacement, is very high; in other words, less gas goes into the engine, and more power and performance come out.

COMPRESS RATIO—Its Advantages
This factor has been carefully engineered in the new Pacemaker engine. All parts related to compression have been designed for a new high compression ratio which gets the utmost performance from present-day fuels. When the power output is high in relation to the piston displacement, as it is in the new Pacemaker engine, a higher compression ratio, such as this engine has, contributes greatly to increased fuel economy, smoother operation, and better performance. Other factors which also contribute are improved carburetion, scientific mani-
fold design, correct engine temperature control, and more efficient valve action.

At the owner's option, the standard 6.7 compression ratio of the new Pacemaker engine may be stepped up to 7.2 to 1 by the use of an aluminum cylinder head.

FULL PRESSURE LUBRICATION AT 31 Engine Points

The new Pacemaker engine is one of the most positively lubricated power plants in any automobile. Oil is pumped under high pressure directly to the four crankshaft bearings, six connecting rod bearings, seven cylinder walls, four camshaft bearings, twelve valve tappets, and the camshaft thrust bearing. Other parts are completely lubricated by splash, spray, or vapor. This thorough lubrication contributes greatly to the long engine life and freedom from upkeep expense traditional in Hudson-designed engines.

The flow of oil from the rotary-type, high-pressure oil pump is constantly metered, and the floating-type oil intake unit permits only the cleanest oil to enter the system, greatly reducing engine wear.

CARBURETION—How it Aids Efficiency and Economy

A new dual-jet carburetor of the downdraft type has been carefully engineered for the new Pacemaker engine to give maximum fuel efficiency and economy in all conditions of normal engine operation—that is, high speed, slow speed, and idling speed. The dual jets meter out the exact amount of fuel required at any engine speed, and do it automatically, thus preventing waste through imbalanced mixtures, and adding greatly to fuel economy.

AUTOMATIC CHOKE—How it Works

This feature of the new Pacemaker engine is entirely controlled by temperature and by the vacuum in the intake manifold—hence it leaves nothing to chance or the errors of human judgment. It instantly supplies a properly enriched gasoline mixture for fast starting, which automatically gives the added effect of an advanced throttle. As the engine warms up, the rich mixture is automatically cut down, and the engine always has the correct fuel supply at any phase of its operation, also preventing crankcase dilution caused by over choking. This automatic feature is important to economy, too, since it does away with carburetor flooding and gasoline loss.

ENGINE CONSTRUCTION

AND EQUIPMENT

AIR CLEANER—Cuts Engine Wear, Adds Quietness

Dust, dirt, grit and other impurities from the road are prevented from entering the new Pacemaker engine by a mechanical air cleaner of advanced type, which scientifically filters out these impurities from the carburetor air intake, even from very dusty regions. Such foreign matter is sucked into the engine and mixed with the cylinder-wall oil film forms a harsh abrasive compound that will readily wear down even hardened parts. The new air cleaner not only prevents this, but acts as a silencer as well. And it is also a safety feature, since in the event of a backfire caused by a malfunctioning engine or some other unforeseen cause, it traps the flame and prevents it from entering the engine compartment.

An Oil Bath Air Cleaner, available at extra cost, minimizes frequency of servicing the cleaner in areas where dust is very prevalent.

AUTOMATIC SPARK ADVANCE and RETARD—Insures Full Power at All Times

Proper ignition timing is important if the engine is to deliver full power at all times, and deliver that power with the greatest economy. The new Pacemaker engine is automatically and correctly controlled by a vacuum spark control, which advances the spark as the engine speeds up, and retards it as the engine slows down or is subjected to hard pulls. Thus the driver is sure at all times, and under all conditions, that the engine timing is perfect for the greatest economy and performance.

BATTERY—Ample in Capacity for All Normal Needs

An improved, 17-plated, 100-amper-hour rating storage battery is standard equipment on the new Pacemaker. Coupled with the high-output generator, this storage battery provides all the electrical energy needed for starting, lighting and ignition, together with a reserve of energy for added electrical equipment, such as radio, heater, and other accessories.

CAMSHAFT—Quiet and Long-wearing

In the Pacemaker engine, this shaft is made of nickel-chrome-molybdenum alloy for great tensile strength and hardness. The cam surfaces are heat-treated for extra hardness and long wear, which makes them run quietly and smoothly for the life of the engine. The entire cam is phosphate-finished for better lubrication, since this process causes the oil to adhere more firmly to the face of the cam. The angular grinding of the cams causes the tappets to rotate, eliminating irregular wear and consequent noise. The camshaft is operated by a silent chain drive.

CAMSHAFT BEARINGS—Oversize, for Long Life

These bearings are of steel-backed babbit, of large size, lined with lead for accurate alignment through the entire length of the shaft. Each of the four camshaft bearings is lubricated by a high-pressure lubricator oil pump over its entire surface.

CARBURETOR HEATER—How It Operates

This unit employs a flow of hot exhaust gas to heat the fuel mixture and assist in proper vaporization. It also promotes smoother engine operation during the warm-up period, and contributes to operating economy. The hot gas circulates around the intake jacket to heat the fuel mixture as it passes into the intake manifold. Operation is automatic and heat flow is thermostatically controlled for quick starting, maximum fuel economy, and full power at all temperatures.

CONNECTING RODS—Their Design

New Pacemaker connecting rods are drop-forged of special high-manganese alloy steel for maximum strength. Each is balanced from a predetermined center toward the ends for uniform center of gravity. Bearings are centrally located—not offset—for perfect balance, both standing and running.

CONNECTING ROD BEARINGS—Type

These bearings are of the steel-back type, with bearing surfaces of long-wearing babbit metal. They are full-pressure-lubricated for long life.

COOLING CAPACITY—In Quarts

The new Pacemaker cooling system is large—18 1/2 quarts—and assures adequate cooling of the engine under the most extreme operating conditions.

COOLING SYSTEM—Component Parts

The system includes a high-efficiency radiator, acoustically designed fan (that is, a fan designed to run quietly at all speeds, without air noise), a large-capacity water pump, permanently lubricated, and a thermostatically controlled by-pass for quick engine warm-up.

CRANKCASE AIR FILTER AND BREATHER

This consists of a wire-mesh, dry air cleaner, through which the dust-free air is forced into the crankcase to assist in the removal of acid-laden crankcase vapors. These are a natural result of engine operation with petroleum-base oils as a lubricant and gasoline as a fuel, but they also operate to form sludge and gum—especially in cold weather. The air cleaner prevents the addition of outside grit to the crankcase lubricant, thus preventing unnecessary abrasion and wear on the engine parts.

CRANKCASE VENTILATION—Standard Equipment

A breather, opening on the side of the engine permits the vapors discussed above to escape into the air stream beneath the moving car.

CRANKSHAFT—Design and Construction

The rugged crankshaft in the new Pacemaker engine is forged with integral counterweights and fully compensated for vibrationless operation. It is designed for unusual strength and made of steel of unusual toughness and tensile strength necessary for high-compression operation. The crankshaft is statically balanced (standing still) and dynamically balanced (while revolving) to eliminate causes of whip and vibration set up by centrifugal force when the engine is running. Main bearing and connecting rod bearings are surface-ground to unusually close tolerances to eliminate strain and wear on the bearings.

CRANKSHAFT BEARINGS—Main Bearings

The four crankshaft journals (i.e., points where the shaft revolves in bearings fastened to the cylinder block itself) have extra-large bearing surfaces to withstand the stresses
of high-compression operation. The large, precision-type crankshaft main bearings are the steel-shell, babbit-lined type so precisely made that it is not necessary to line-ream or specially fit them up at installation, as is the case with ordinary-type bearings. The special bearing metal used eliminates friction to such a degree that under average conditions the bearings are good for the entire life of the engine. Each bearing is lubricated directly from the extra-capacity, high-pressure oil pump.

CYLINDER BLOCK—Super-hard, Chrome-alloy, and Why

All Hudson engines use a special chrome-alloy instead of the usual mild cast iron, and they are the hardest, low-temperature-bearing blocks in any automobile engine. They are highly resistant to acid corrosion, and on actual test, will wear out several sets of piston rings without the cylinder wall going out of圆周。This means the maintenance of high compression long after the period when ordinary engines must be overhauled, re-lined, or honed to restore cylinder roundness and compression. The result is high-quality performance for much longer running time, more power from gasoline used, and lower consumption of both gas and oil. Upkeep cost is also reduced, because piston rings and valves give much longer service without attention. And, being so extra-hard, the cylinder block machine to a mirror-smooth finish, so that it is not even necessary to install the usual special valve-seat material common to ordinary engines.

CYLINDER BLOCK COOLING—High-compression Design

Each cylinder in the new Pacemaker engine is completely surrounded by water flowing rapidly under high pressure. The cooler only the cylinder ruin the block, but also aids in cooling the lubricating oil, thus maintaining its efficiency as a lubricant. In addition, a special water distribution manifold, connected directly to the water pump, insures that the cylinders and valve seats receive the most effective cooling, since these are the points of greatest engine heat.

CYLINDER HEAD—Special Power-Dome Design

The scientific design of the new Pacemaker engine head is another example of Hudson’s advanced engineering. The inside contour of this head insures that the fuel entering the combustion chamber is in a violently agitated or turbulent state, thus insuring even, perfect combustion. Specially developed for high-compression operation, the Power-Dome head is of rigid construction, thus insuring a perfect fit to the cylinder block during the entire life of the engine.

The standard equipment Power-Dome cylinder head is of iron alloy, giving a compression ratio of 6.7 to 1 for outstanding high-compression performance with unusual economy. For those who desire a still higher compression ratio and extra-brilliant performance in all speed ranges, an optional aluminum Power-Dome cylinder head is available, giving a compression ratio of 7.2 to 1. Many buyers prefer the iron alloy quality, however. Because of the additional material and manufacturing expense related to the aluminum head, it is offered as an extra-cost option.

DAMPENER—Crankshaft Vibration Check

In running, certain vibrations and disturbances are bound to occur in any engine, no matter how carefully balanced. The new, improved Hudson vibration damper, of special design, absorbs and cushions these running disturbances, thus insuring a smooth flow of power. In the new Pacemaker engine this damper consists of two members—one is joined rigidly to the crankshaft, and the other, like a small flywheel, is separated from the rigid member by live rubber surfaces forming a resilient connection. Unlike some other types of dampeners, this improved Hudson damper has no parts that require repair or replacement.

DISTRIBUTOR—Its Design

Superior engineering makes this electrical unit both moisture-resistant and accurate in the new Pacemaker engine. It is built for long, trouble-free service.

ENGINE BALANCE: Scientific Balancing of Complete Engines

Hudson has always balanced the component parts before assembling them into an engine. Now, in addition, Hudson has pioneered in the perfection of the use of special equipment for the scientific balancing of complete and assembled engines while the rotating and reciprocating parts—crankshaft, clutch, damper, flywheel, connecting rods and pistons—are in motion. This precision balancing of the complete engine is accomplished by electronic methods on giant machines, the first of their kind in the industry. The special machines are twenty feet long, weigh ten tons each, and have an electric motor, a "brain-box" amplifier and translator, a cradle on which the engine to be balanced is mounted, and a double hydraulic drilling unit operated by generators which are actuated by the "brain-box." As the engine goes into a balance test-run, any vibrations that would occur in actual operation are picked up by the "brain-box," which "reads" where any imbalance occurs, and then controls the equipment which makes the necessary modifications to bring the engine into perfect running balance.

ENGINE MOUNTINGS—3-Point Suspension

Live rubber cushions prevent the transmission of sound and vibration from the engine to the new Pacemaker’s Monobilt body-and-frame. They also permit a predetermined oscillation of the engine for smooth acceleration and deceleration.

EXHAUST MANIFOLD—with Center Outlet

This outlet permits quick dispersal of burned gases, and is supplied with a heat valve which diverts the hot gas to warm up the carburetor intake jacket whenever necessary. The heat valve is controlled by a thermostat, which gradually closes and shuts off the exhaust gas flow from the carburetor as the engine warms up. This insures efficient engine operation under all temperature conditions.

EXHAUST PIPE—Between Engine and Muffler

This is made in large size, to permit quick removal of exhaust gases from the engine, and thus lessen back-pressure and consequent power loss. Connections to engine and muffler are leakproof.

FAN—Modern, Silent Design

The fan on the new Pacemaker is a large blades, which throw a large volume of air as they revolve, thus greatly increasing cooling efficiency. Normally, such a fan would be noisy, in much the same manner as a plane propeller. However, by a very clever spacing of the blades, the new Pacemaker engine's fan's sound is out of phase or pitch with engine sound frequencies, and the result is almost complete silence. Another contributing factor is the fan's comparatively slow speed; due to its efficiency in moving large masses of air, it can be driven much more slowly than ordinary engine fans, which makes it quieter. The shaft of the fan is cadmium-plated to prevent corrosion or rusting, and runs in a double-row ball bearing, permanently lubricated and life-sustained. No adjustment or maintenance of the fan itself is required, and the V-belt drive is easily adjusted for proper tension.

FUEL PUMP—Positive Action, Mechanical Type

An ample supply of fuel to the new Pacemaker engine is insured by the use of a double action of the above-mentioned fuel pump, with a positive mechanical action. A diaphragm-type fuel pump with a vacuum booster for stepping up windshied wiper action under conditions of slow city driving may be added as an optional extra.

GENERATOR—New, High-capacity Type

The new design, shunt-type generator is capable of greater ampere output at slower speeds, thus keeping the battery charged up at times of unusual current demands, such as the usage of added accessories. It is cooled by fan-forced ventilation, and provides a ample charging rate for all engine and accessory requirements.

IGNITION COIL

The coil is of higher output, because of the higher intensity of spark needed for the higher compression ratios. The hotter spark improves ignition for better fuel combustion, and greater engine efficiency.

IGNITION SWITCH AND LOCK

These are located to the right of the steering column and directly in front of the driver. When the starting lights are on, the keyway has an "On" position—a safety factor which prevents the accidental starting of the engine by children, or even by adults.
IGNITION SYSTEM—New High Voltage

The new high-compression Pacemaker engine requires a new high-voltage type system, which is made moisture-resistant for dependable operation during wet weather.

INTAKE MANIFOLD—New High-compression Design

This is of the direct-flow type, having passages to the cylinders so designed that gas is distributed evenly to all the cylinders, regardless of their distance from the carburetor. This provides the power impulses in all cylinders equal, resulting in smoother operation and lower fuel consumption.

MUFFLER—New Silent Type

This unit is of extra-large size to reduce engine exhaust noise to a minimum. It is of the straight-through, double-tube type, which reduces the exhaust gases to pass right on through, without building up back-pressure. This permits the engine to develop full power, and thus give maximum performance. The noise from the muffler is kept away from the passengers by locating the unit at the extreme rear of the car, under the trunk.

OCTANE ADJUSTMENT—Wide Choice of Fuel

Once the owner has settled on a certain grade or brand of gasoline for his new Pacemaker, the ignition distributor on the engine may be adjusted to give the best possible engine performance with that particular gasoline.

PISTONS—Improved Design

In the new Pacemaker engine, the pistons are of an advanced design pioneered by Hudson—a silicon-aluminum alloy that is extremely hard, and at the same time lighter than pure aluminum. This provides a superior bearing surface that is free from scoring and scuffing. The piston design minimizes expansion, and prevents warping under temperature changes. They are cam-ground to insure a close fit when cold, and to insure continuous perfect roundness and clearance during high-temperature operating conditions. External surfaces are machined to a glass-smooth finish, and piston-pin holes are diamond-bored for accuracy.

PISTON PINS—Full-floating Type

These are free to rotate, not only in the bronze bushing in the end of the connecting rod itself, but also in the diamond-bored holes in the piston. The pins are carefully ground, and then lapped to a glass-smooth finish, and size is held to within ±0.0005 of an inch, to ensure a perfect fit in both the piston and the connecting rod.

PISTON RINGS—Pinned in Position

There are two compression rings and two oil-control rings on each piston in the new Pacemaker engine, and these are pinned in position so they cannot rotate around the piston after installation—an exclusive Hudson feature. Thus the gaps in the rings cannot line up, one above the other, to permit a possible compression leak, and the rings cannot chatter or cause irregular wear. All piston rings are specially treated by exclusive Hudson process to prevent scuffing of the cylinder walls during the break-in period.

RADIATOR—New Type Cellular-Tubular Unit

This new radiator has a high flow rate for fast heat dissipation, thus assuring proper engine cooling at all temperatures, and under all driving conditions.

SPARK PLUGS—Designed and Developed by Hudson Engineers

The trouble-free life of these new plugs is approximately three times longer than that of the ordinary type, and they are exclusive in Hudson-built automobiles. Ring-designed body tends to prevent electrical leakage and short-circuiting from moisture, grease or dirt.

STARTER SWITCH—At Finger Tip

This switch is conveniently located at the left of the steering column, directly in front of the driver. It will operate at any time, regardless of the ignition key position, and is designed for safe starting by children and others—a definite Hudson safety factor.

STARTER MOTOR—High Torque, High Efficiency

Easy and quick starting at any temperature is assured by this powerful new motor, which has more than sufficient capacity to turn the engine over at fast speed. The improved Bendix starter drive is positive in operation, and designed for long life.

TAIL PIPE—Short and Efficient

This pipe, extending from the muffler to the open air behind the car, is much shorter than on cars with centrally located mufflers; hence it is free from loops, bends, and curves, which build up back-pressure in the engine by interfering with the free flow of the exhaust gases. In fact, it helps reduce back-pressure, and thus promotes more efficient engine operation.

TAPPETS—Quiet, Long-wearing

These parts, which take the lifting motion of the cams and transmit it to the valves, are of an improved mushroom type, with self-locking adjusting screws. The "mushroom" feature simply means that the end of the tappet is widened, to provide a larger wearing surface, and thus reduce wear at any point. The self-locking feature of the adjusting screws means that adjustments can be made more quickly and easily, and, once made, they stay in adjustment until they are changed again. There are no lock nuts to set up or work loose, resulting in quieter and more efficient operation. All tappets are machined, and the guides are a part of the cylinder block itself, assuring perfect alignment and long life.

VALVE—Angle Set for Greater Efficiency

The valves of the new Pacemaker engine are installed at an angle pointing toward the combustion chamber, to spread the flow of the fuel mixture toward the cylinders, and to permit equal fast exhaustion of burnt exhaust gases. The exhaust valves themselves are of a two-piece type, of a special heat-resisting high nickel-chrome alloy; they are longer-wearing, and will not become distorted under high running temperatures. All valve seats are cooled all the way around by the pressure-cooling system.

VOLTAGE REGULATOR—Guards the Electrical System

This unit is of the most advanced type, and does many things automatically to see that the electrical system of the new Pacemaker works properly at all times. First, it automatically sees to it that the battery is charged at the proper rate, regardless of the generator speed or demands for electrical current. When demands are heavy, and the battery charge is low, it cuts in the highest possible charging rate, gradually reducing it as the battery comes up to full charge. The rate varies according to demands made on the battery, but is always correct for the conditions involved. This prevents overcharging and ruining the battery through sulfating or plate-buckling, thus reducing over-all operating and upkeep expense.

WATER PUMP—Positive and Powerful

The rotary-type water pump on the new Pacemaker engine is designed to drive a larger volume of water constantly through the cooling system, while the pump itself is operating at a comparatively slow rate of speed. This insures positive circulation and cooling without excessive wear or need for frequent servicing or replacement of the pump unit. The pump shaft is cadmium-plated to resist corrosion, and runs on a double-row ball bearing, which is permanently lubricated and sealed for a lifetime of trouble-free operation.

BY-PASS—In Water Pump

A by-pass for engine coolant is internally incorporated within the water pump and cylinder head. It does not employ external hoses or hose clamps. Controlled by a thermostat, this leeway in the water pump's design forces the water in the engine block to continue to circulate around it after starting, instead of going through the radiator to be cooled off. Thus the engine reaches an efficient operating temperature very quickly, even in coldest weather, and it also increases the early efficiency of the heater in the car. When the water in the jacket reaches the thermostat's operating temperature of 160 to 180 degrees, the thermostat opens and permits water to circulate through the radiator in the usual way.

WIRING—Spark Plugs and Other Ignition Points

All the ignition wiring on the new Pacemaker engine is waterproof and of extra capacity to transmit the electrical current without loss.
MECHANICAL FEATURES:

BRAKES are Triple-Safe

Instead of having just two conventional braking systems, as in all other cars, the Pacemaker has three braking systems: 1—Powerful hydraulic brakes; 2—A mechanical reserve system; and 3—Finger-release parking brake. When the Pacemaker brake pedal is pushed through its average range of travel, the big hydraulic brakes on each wheel stop the car surely and safely, in the distance the driver desires.

If, due to accident or neglect, the hydraulic system fails—a condition which may sometimes occur in any car, as every experienced driver knows—Hudson alone provides a reserve mechanical system to stop the car safely. Further pressure on the brake pedal brings this reserve system into action—an exclusive Hudson safety feature that gives the greatest possible protection to Hudson drivers and passengers at all times.

In addition to the hydraulic and mechanical reserve systems found on all Hudson cars, there is a finger-tip-release parking brake, conveniently located under the left side of the instrument panel— handy to reach and easy to use.

SERVO-ACTION, Self-energizing Brake Operation

The hydraulic brakes on the new Pacemaker, and all other new Hudsons, are of the so-called "Servo-action" type, which requires very much less pedal pressure to operate, and which is of especial benefit to women drivers. The energy of the moving wheels of the car is picked up by the brake shoes as pressure is applied at the pedal. The shoes attempt to follow the brake drum around, but since they cannot, this forward energy is applied through a wedge action to force the shoes up against the drums. Thus the braking action may be applied as slowly or as quickly as the driver desires, at just a touch of the brake pedal, and the car comes to a smooth, safe stop.

BRAKE DRUMS—Centrifuge Type

This ultramodern type of brake drum is probably the most expensive to manufacture of any now on the market. But it is also the most efficient and satisfactory, as well as the safest, and that is why Hudson uses it. The outer casing of the brake drum is of alloy steel of great strength, while the inner casing is of a special cast alloy that is very hard and long-wearing. The inner casing is spun into the outer casing by centrifugal force while hot, thus fusing the two metals together. These drums cool rapidly in use, because they dissipate heat very quickly, which prevents distortion under heavy and continuous use, and does away with brake "fading" often found in ordinary types of brakes when the drums get hot and expand.

To keep out water, dirt, and other substances harmful to the braking surfaces, Hudson engineers have fitted the brake drums with patent shields—a feature not found on many competing cars.

FLUID-CUSHIONED CLUTCH—Smooth, Positive and Trouble-free

Here is another exclusive Hudson feature that adds greatly to the pleasure of driving the new Pacemaker and other Hudson-engineered automobiles. In ordinary cars, using a dry-plate clutch, the hard, bone-dry friction surfaces are forced together when the clutch is engaged, setting up conditions which lead to clutch "chatter" and "grabbing." In the Hudson Fluid-Cushioned Clutch, cork friction surfaces are engaged with the friction surface of the flywheel in a bath of special clutch fluid. The cork inserts in the face of the driven plate have a live, springy action, and the fluid serves as a further cushion to break the impact as the two surfaces come together. The result is a direct, positive connection between engine and transmission that eliminates grab and chatter—gives what engineers call a "cat's-paw action." Yet, despite its softness and velvet smoothness in action, the Hudson Fluid-Cushioned Clutch is the longest, most trouble-free of any clutch now on the road.

NOTE: The Hudson Fluid-Cushioned Clutch is not to be confused with the fluid drives or couplings in other automobiles, which do not provide a positive connection between engine and transmission. Such fluid connections slip at practically all speeds, causing a continuous power loss between engine and wheels which run as high as 15%—not to mention added wear on the engine and the waste of both gasoline and oil. The Hudson Fluid-Cushioned Clutch costs more to build. But it costs the owner far less to operate, since it doesn't slip when the car is accelerated or as it rolls along the highway.

INDEPENDENTLY SPRUNG FRONT WHEELS—How They Operate

The new Pacemaker's front springs are of the coil type, made of a silico-manganese steel alloy which is almost impossible to break in service. These springs are so mounted that they have nothing whatever to do with driving or steering the car; their only function is to cushion the weight of the car body and the passengers. Heavy steel wishbones on the front end absorb all driving and braking stresses, while large rubber bumpers, mounted on the lower support arm, prevent the springs from "bottoming.

Safety is the first with Hudson engineers always, and the new Pacemaker is but another example of the typical way in which Hudson provides extra safety through the entire car, even providing for emergencies which Hudson engineers privately believe could never happen.

PROPELLER SHAFT—A Direct-line Drive

This driving unit is underslung, and tandem in the new Pacemaker, to provide a direct drive from the engine to the rear wheels. The entire propeller-shaft assembly is balanced, and supported by a midship steady-bearing mounted in rubber for smooth, vibrationless operation. This exclusive, tandem-type shaft has many other advantages over the common long single shaft bearing a single universal joint. Because it is under far less strain, it is more substantial and long-lasting. And car operation is more efficient because power transmission is smoother.

REAR AXLE—Semi-floating Type

The new matched Hypoid driving gears in the Pacemaker rear axle permit the pinion gear on the end of the propeller shaft to be mounted nearer the center of the ring gear. This permits a lower body-and-frame and an extremely low center of gravity. The Hypoid gears have greater tooth contact and greater tooth strength to assure long and trouble-free service. All Hudson rear axle gears are fully adjustable to insure perfect alignment and complete silence at all times.

REAR AXLE SHAFTS—Extra-strong, Extra-safe

The axle shafts found in the new Pacemaker have been made extra-strong and durable through the use of a special high tensile strength nickel-chrome-molybdenum steel alloy, and have been specially designed for hard usage and severe road service.

REAR AXLE BEARINGS

Of the tapered roller type for long life and perfect alignment. Wheel bearings are packed with lubricant at the time of assembly, and require servicing only every 10,000 miles or once a year. Inner bearings are lubricated by the lubricant used in the rear axle.

REAR SPRINGS—Engineered for Soft Riding

Long, gentle-acting leaf-type springs are used on the rear of the new Pacemaker. Special rubber mounting between the rear axle and the spring acts to cushion road shocks, while the U-type, self-adjusting shackle at the rear of the spring is fitted with a rubber seal to prevent the entrance of dirt and dust. The free end of the spring is mounted in rubber, so that the mounting is permanently quiet and does not require lubrication. The result is a gentle, quiet ride under all road conditions.

REAR SPRING MOUNTED

"Spray mounting" means placing the springs at an angle with the rear ends farther apart than the front ends, instead of the usual parallel leaf-type springs—parallel to each other. Exhaustive engineering tests, both in the laboratory and on the road, have proved that Hudson's spray-mounted rear springs have great efficiency in reducing fluid drive, and produce riding qualities that are far superior to springs mounted in the conventional manner—that is, exactly parallel to each other.
SHOCK ABSORBERS—Airplane Type

Positioned at each wheel for the most efficient ride control, the large-capacity, airplane-type units used on the new Pacemaker are sealed for life, and never require refilling. Introduced by Hudson, these ultramodern shock absorbers hold four to five times the amount of fluid that the ordinary elbow type does. Thus the fluid inside the unit can be handled in larger volume and passed through larger apertures, at a lower pressure, creating a larger, softer "cushion" to absorb road jolts and bumps. Older elbow-type absorbers, with a smaller amount of fluid passing through smaller outlets, tend to give a much stiffer, more punishing ride.

STABILIZERS—Front and Rear

These units prevent side-way in heavy winds and on rough roads; they also check the tendency of the moving car to "heel over" to the outside of a curve. All new Pacemaker models have stabilizers at front and rear instead of at the front end only, as in some other makes of cars.

The front stabilizer is a new dual-acting type which eliminates front-end sway and stabilizes the ride on rough roads, in heavy winds, and on sharp turns. It is mounted in rubber for the most efficient action, and connected to the front suspension lower control arm. This also aids in easier steering and turning. The rear stabilizer, of improved design, eliminates axle "hopping" and the continued vibrations from axle and rear spring action, which would otherwise have a tendency to carry on and build up long after the initial road shock had passed. This increases both ride and riding comfort. One end of the rear stabilizer acts as a fulcrum, and is connected to a body-frame member in a special rubber mounting. The other end is rubber-mounted to the rear axle for effective operation.

STEERING—True Center-Point Design

Safer control and the greatest steering stability over all kinds of roads, at all speeds, are the results Hudson achieves with its Center-Point design. A development pioneered by Hudson, Center-Point steering has been adopted by several others in the industry—proof positive of the soundness of Hudson's basic engineering conceptions. Center-Point steering, as used by Hudson in the new Pacemaker, costs far more to design and build, because of the extreme accuracy required in every part. But the results more than justify the added expense, for with front-wheel control equalized, road shock is not transmitted to the driver's hands through the steering wheel, and uniform control is assured, regardless of road or speed conditions.

STEERING GEAR—Worm-and-Roller Type

Steering shaft and cross shaft in the new Pacemaker's steering gear are carried in needle roller bearings for easier, most friction-free operation. More costly to build than conventional steering, the longer life and safer, more positive action make Center-Point steering well worth the cost to every driver who tries it. The added flexibility and ease of turning are especially noticeable when making a complete U-turn (the new Pacemaker's turning radius is 196.5 feet) or in getting in and out of crowded parking spaces.

STEERING RATIO—18.2 to 1

This is a very high ratio for a car the size of the new Pacemaker. But it makes finger-touch, effortless steering possible—especially when placed in combination with the other quality features of the entire Pacemaker steering mechanism. And this ease of steering is a definite safety factor, too—always a first consideration with Hudson engineers.

STEERING WHEEL—Extra-large

The new Pacemaker's steering wheel has a diameter of 18 inches, and is a new, 3-spoke design with a rim that is easy to grasp and hold securely with the fingers. Its bright, modern finish harmonizes with the new, ultramodern interior of the new Pacemaker.

TRANSMISSION—An Exclusive Hudson Design

Hudson-designed and Hudson-built, with improved hard-shift control at the steering wheel for positive action and easy operation, this synchronized mechanism enables the driver to shift gears quickly and quietly. The helical gears, machined to close limits, are noiseless in operation, and all shafts are supported by specially designed ball, roller or steel-backed babbit bearings, depending upon the type of friction or thrust that is to be overcome. Positive lubrication is provided to all points of the transmission. The unusually liberal use of quality bearings, plus thorough lubrication, makes this an exceptionally quiet, easy-operating, and long-lived transmission.

UNIVERSAL JOINTS—Strong, Efficient, Friction-free

The three universal joints used in the new Pacemaker's underslung, independent propeller shaft are of needle roller bearings and pressure-type lubrication fittings. It is unnecessary to drop the shaft or disassemble the universal in order to pack them with grease; they may be lubricated right in the car in the course of ordinary periodic lubrication. The design, construction, and installation of these universal joints contribute to long life, and provide the most efficient means of carrying the drive from transmission to rear axle.

BODY-AND-FRAME DESIGN

DIMENSIONS AND CONSTRUCTION

DIMENSIONS OF THE NEW PACEMAKER:

<table>
<thead>
<tr>
<th>Description</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheelbase</td>
<td>119&quot;</td>
</tr>
<tr>
<td>Over-all length</td>
<td>201.5&quot;</td>
</tr>
<tr>
<td>Over-all width</td>
<td>77&quot;</td>
</tr>
<tr>
<td>Over-all height, loaded</td>
<td>60.5&quot;</td>
</tr>
<tr>
<td>Road clearance</td>
<td>83&quot;</td>
</tr>
<tr>
<td>Hip room, front and rear seats</td>
<td>64&quot;</td>
</tr>
<tr>
<td>Elbow room, front seat</td>
<td>66&quot;</td>
</tr>
<tr>
<td>Elbow room, rear seat</td>
<td>65&quot;</td>
</tr>
</tbody>
</table>

BODY STYLES—New Pacemaker

- 4-door Sedan
- 2-door Brougham
- Club Coupe
- Convertible Brougham
- Three-passenger Coupe

BODY-AND-FRAME Construction—New Pacemaker

Hudson's famous Monobilt body-and-frame construction is used throughout the new Pacemaker series—even in the Convertible Brougham. By this unique method of construction, frame and body are welded into one piece of cold steel, with structural members going even outside the rear wheels. Thus, the passengers ride within the safety of welded-steel girder members in the strongest, quietest, safest body that modern engineering has devised. In addition to outstanding strength and safety, this exclusive method of body construction also makes possible new high standards of beauty, roominess and roadworthiness, as it permits a very low center of gravity, with full road clearance.

STEP-DOWN DESIGN—Basic of Modern Car Beauty...

But it is also the basis for much more than beauty and advanced styling. In the new Pacemaker, as in all other new Hudsons, passengers ride within the frame—not on top of it. This permits full-width seats, unobstructed by wheel housings, as well as the use of the space between the frame members for foot and leg room. The result is more interior roominess; more passenger space; and wider seats in the new Pacemaker than in any other mass-produced car built today, except another Hudson.

MONOBILT Construction... Amazing Head Room and Full Road Clearance

Despite the fact that the new Pacemaker is actually wider than it is high, there is no sacrifice of head room inside; passengers have just as much overhead clearance as they ever had in older-style cars, with bodies mounted up on top of the frame. "Step-down" design simply has made it possible to lower the floor of the passenger compartment without changing the space relationship between roof and floor.

The result is a new, low silhouette that makes the new Pacemaker the lowest-built car on the highway—yet it has full road clearance for driving on back roads and in farm country.
With Added Safety and Stability

But—more important still—the new Pacemaker’s “step-down” design makes it possible to lower the car’s center of gravity to a considerable degree. And, as all automobile manufacturers and motor car buyers know, the lower the center of gravity, the safer and more stable the car is on the highway. Because the car tends to hug the road at all speeds and on turns, it is not easily swayed from its course by wind, road irregularities, or load. And Hudson’s exclusive “step-down” design makes the new Pacemaker and all other new Hudsens the lowest, safest, steadiest automobiles on the highways... all this with the added luxury of a spacious interior head room and full road clearance beneath the car.

MONOBILT* Construction—Body and Frame Combined

With this advanced construction in the new Pacemaker, the structural members—heavy, box-section foundation girders, husky cross members, sturdy body pillars and formed roof rails—completely encircle the passenger area. These members, rigidly welded together, form a sturdy, bridge-like structure that is unequalled in the automobile field for ruggedness, quietness, and strength. Then, when the all-steel roof, floor, and body panels are solidly welded together, structural members, passengers are shielded in every direction by a unified structure of tough, sound steel.

Naturally, such a body is far safer on the highway—-in fact, Hudson body construction, with its many unique features of strength and rigidity—is generally admitted to be the safest known. It also has many added advantages in the field of passenger comfort.

First, because it is rattle-proof, it gives one of the quietest rides known, with no bumps, jar, or jolt noises that many bodies of ordinary construction develop at certain speeds, or after a certain period of use.

Second, it makes possible a body that can be absolutely sealed against the weather. And this weather-tightness—this freedom from drafts and leaks, continues right through the long life of the car.

Third, this unique body construction makes possible one of the most perfect jobs of streamlining to be found anywhere in the world today. And perfect streamlining contributes not only to driving ease and stability in any kind of wind or weather; it also makes possible the exclusive, low-built streamlined styling which sets the new Pacemaker—and all new Hudsens—apart from any other automobiles in the world. For Hudson-built automobiles stand out in the crowd—not only because of their outstanding performance, but because of their universally recognized style. You can never mistake a Monobilt body-and-frame* Hudson for anything else; it has its own refreshing individuality in whatever company you see it!

Remember—in the new Pacemaker, the passengers ride inside steel structural members that completely encircle the passenger area; the box-section, steel structural girders give added protection all around the passenger compartment—even inside the rear wheels. Passenger ride down within the foundation frame—not on top of it. And they ride completely ahead of the rear wheels, with full protection on all sides.

And the new Pacemaker has more inside room than any other make, regardless of price. Here is something of tremendous importance to the motor-car buyer—something he can see, feel, and check for himself. The new Pacemaker gives him the widest, roomiest, best-riding seats of any make of car. It gives him plenty of leg room and ample head room. It offers more hip room, more elbow room, and more shoulder room than any other make of car—and here are the figures to prove it:

**DIMENSIONS—Front Passenger Compartment**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front-seat hip room</td>
<td>64”</td>
</tr>
<tr>
<td>Front-seat elbow room</td>
<td>46”</td>
</tr>
<tr>
<td>Front-seat head room</td>
<td>43”</td>
</tr>
<tr>
<td>Front-seat leg room</td>
<td>43”</td>
</tr>
<tr>
<td>Clearance between front seat and steering wheel</td>
<td>6”</td>
</tr>
</tbody>
</table>

**DIMENSIONS—Rear Passenger Compartment**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rear-seat hip room</td>
<td>64”</td>
</tr>
<tr>
<td>Rear-seat elbow room</td>
<td>45”</td>
</tr>
<tr>
<td>Rear-seat head room</td>
<td>44”</td>
</tr>
<tr>
<td>Rear-seat leg room (maximum)</td>
<td>42”</td>
</tr>
</tbody>
</table>

Yes—the new Pacemaker gives the new-car buyer more inside room than any other make, regardless of price or over-all size. Just as, feature by feature, the new Pacemaker gives the motor-car buyer more basic and fundamental value per dollar invested, only Hudson salesmen can make these claims; only Hudson salesmen have these unique and powerful selling advantages over competition.

**LOWER CENTER OF GRAVITY... Its Importance**

Technically, the center of gravity is “that point in a body about which all of the weight parts exactly balance, in any position.” In the automobile, the lower this point can be brought down, the easier it is to secure absolute stability on the road. A very low center of gravity in the new Pacemaker is the natural result of “step-down” design. The new Pacemaker, with its recessed floor, and roof line lowered proportionately, has its weight closer to the ground; therefore, the center of gravity is lowered—actually lower than in any other make of car. This important development is exclusively Hudson—because only Hudson offers the design and construction features which make it possible. It is easily understood why cars with old-type body construction—that is, body bolted on top of frame with the frame’s top edge—have a higher center of gravity, and why this higher center is less safe, less road-worthy, and less desirable than the compact, low-built, stable new Pacemaker.

**ROADABILITY**

The lower to the ground a car can be built, the greater will be its roadability and road-worthiness under all conditions. “Step-down” design gives the new Pacemaker the safest, surest, steadiest, most hug-the-road way of going ever known.

**ROAD CLEARANCE... Its Importance**

Low center of gravity, as found in the new Pacemaker, must not be confused with low road clearance, or insufficient room between the bottom members of the car and the crown of the road.

The new Pacemaker has a full 8 1/8 inches between the lowest point in the car and the road surface—ample for all clearance needs. The new Pacemaker, on the other hand, is purely a balance point, and does not correspond with any particular part of the car; hence, with Hudson’s “step-down” design, it does not reduce road clearance.

**DOORS—Both Front and Rear**

These are hinged at the front edge for greater safety. Even though unlocked, or accidently opened, air pressure tends to keep them closed. And their exclusive design, with recessed window, provides additional hip and elbow room in the new Pacemaker’s very wide sides.

**DOOR LOCKS—Designed for Safety and Convenience**

Both front doors have outside door locks, while the handles are of the rigid type with push-button latch releases. Fully streamlined, and closed at both ends, there are no openings to catch clothing or hook sleeves and thus cause accidents. Inside door-locking knobs are pushed down to lock doors, and pulled up to unlock doors. Leaning on the inside push buttons by children or others will not lock the door, a very desirable safety feature. Added security is also offered by the new Pacemaker’s inside push-button locks, which, when pushed down, make the inside and outside door-opening handles operative. And by this same arrangement you cannot lock yourself out of the car. It is impossible to slam the door shut from the outside, and thus lock it; either the button must be pushed down from within, or the key inserted in the lock from without, and turned. The driver’s keys cannot be accidentally locked inside the new Pacemaker.

**DOOR PANELS—Recessed Feature a Hudson “Exclusive”**

It will be noted that the door and window controls are carried on the inside face of the door—a Hudson feature which takes these parts out of the passenger’s way, and provides more hip and elbow room.

**FENDERS—Front and Rear**

The careful streamlining of these units makes them seem an integral part of the Monobilt body-and-frame. Actually, they are bolted-on parts that are easily and quickly removed for repair or replacement, if this is ever necess...
sary. Because of advanced designing and engineering, it is possible to remove and install Hudson fenders with greater ease and in quicker time than ever before. Based on today's costs of material and labor for the most frequently damaged sheet-metal parts of automobiles, the cost of this work on the new Pacemaker is 20 percent less than on 1946 and 1947 model Hudsons.

FINISH—New Gem Lustre Improves, Beautifies
This new and advanced finish is more beautiful than anything previously used, because it has greater depth and clarity and very rich color. Because of its high metallic content, the finish reflects and refracts light more strongly and thus has the faculty of looking brilliant and new for longer—a definite advantage where the owner's pride is concerned. The new Gem Lustre finish is now available in 6 exciting regular colors, with 5 special colors and 4 two-tone combinations optional at slight extra cost.

INSULATION AND SOUNDPROOFING—Its Advantages
All body panels in the new Pacemaker have been insulated and soundproofed with felt or other suitable insulating material. The underbody from the front seat to the rear of the body, the wheel housings, the interior of the trunk, and the top of the floor, from the rear of the car to the toe-board riser, are heavily coated with a siliconized salt, sound-deadening material which prevents groaning, rumbling and other objectionable vibration noises which may occur in all-steel bodies. This insulation also helps to keep the cold out of the car in winter and heat out in summer. A most important consideration is for men, women, doctors, and others who must use their cars at all seasons and let them stand out a great deal of the time.

INTERIOR LIGHTING—A New and Better Type
The bright dome light in all models of the new Pacemaker is placed up front, over the windshield header—not concealed at some point over, or around, the rear compartment. The result is a lighting system that can actually be used to read maps, road directions, or to search through handbags and luggage for travelling aids. This brilliant light not only lights those in the front seat, but lights the rear compartment as well, providing far more light for those behind than the old-type, fractional candlepower dome or side lights ever did. It is also easily turned on or off by the driver.

INSTRUMENT PANEL . . . Newly Designed for Greatest Convenience
Controls and instruments on the new Pacemaker are grouped for the greatest convenience of the driver, and all instruments are new, with larger phosphorescent pointers which make for easier reading, night or day. The instrument numerals and markings are on the instrument glass—not on the dial of the instrument itself—and are determined according to the laws of optics to make them easiest to read. Instrument design is entirely new, only the numerals and pointers illuminated for improved visibility. Teleflash signals—invisible except when in operation—show bright red when the oil pressure or the generator charging rate drops. And in night driving, there is no reflection of the Pacemaker's flash on the windshield to interfere with the vision of the driver.

The instrument panel itself has been given a new fabric finish to harmonize with the new Dura-fab plastic treatment of the car interior, with a large-size parcel compartment equipped with a strong lock and a button-operated spring-catch latch. In the center of the instrument panel, just below the windshield wiper control knob, is a generously-sized ash tray (rear-compartment ash tray is in the back of the front seat). Best sound distribution is secured by locating the radio speaker grille on top of the instrument panel, which gives clear reception for rear-seat passengers without annoying volume for those in front. Radio control knobs are positioned within easy reach of all front-seat passengers.

LIGHTS—Improved Sealed Beam Type
These are of the latest Sealed Beam design, with units that will function throughout the life of the lamp, practically no decrease in efficiency. Both high and low beams provide a greater amount of light at wider angles than in any previous system. This permits the driver to see better at night, and to see farther and quicker with less eye-strain and fatigue.

Parking lights are a part of the front grille ensemble. They are designed to harmonize with the front-end styling and to serve as the front directional lights when directional signal equipment is installed.

Tail lights are designed for great brightness and visibility, and are carefully positioned at the rear of the car for maximum effectiveness. The tail light bulbs serve a dual purpose—lighting the interior of the trunk as well as the tail lights themselves. The tail lights are also designed to serve as directional signals when such equipment is installed.

The stop lights are integral with the tail lights, with special bulbs of extra brilliance lighting up through a hydraulic switch, which is automatically closed when the brakes are applied.

Directional signals are optional equipment at slight extra cost, and are incorporated into the front parking lights and the rear tail lights as explained previously. A convenient control lever on the steering column operates them at the will of the driver. A warning signal on the instrument panel flashes red when the directional indicators are operating.

Rear Window . . . A New Safety Feature

Vision has been greatly increased over former standards by the adoption of a plate glass rear window on the new Pacemaker. Thus, from the driver's seat, there is an unobstructed view of the road behind and even of the area immediately around the rear quarters. This adds greatly to the safety of driving, and greatly lessens strain and fatigue.

Tires are new, high-volume, low-pressure Super-Cushion tires, 15 x 7.10 in size, and are standard equipment on all Pacemaker models. Larger and softer than conventional tires, they absorb road impacts and gently cushion car and passengers. Reducing road shocks and vibrations to a minimum, they help lengthen the life of the engine and mechanical parts of the car. Their lower air pressure and more flexible construction give better traction and safer car handling.

Tire rims have a wide base for greatest safety. These rims are designed and manufactured specially for use with the new Super-Cushion tires.

Trunk or luggage compartment is master-size, holding as many as fifteen large and small pieces of luggage. It is fitted with a woven-fabric mat, sides are padded to match the color of the car, and the deck lid is equipped with spring-loaded hinges for effortless opening and closing. A rugged theft-proof lock assures protection of personal belongings.

Upholstery is rich, long-wearing Bedford Cord in combination with new Dura-fab plastic trim. Seats and seat backs of improved spring construction are form-fitted with a beautiful, durable Bedford Cord. Door panels, lower seat panels and the back of the front seat are trimmed with a new and marvelous vinyl plastic that Hudson has named Dura-fab. It is a beautiful, lustrous material that will not scuff, crack, split or peal; it is stackproof and is easily kept clean with a damp cloth. The great durability of this practical new plastic material will keep Pacemaker interiors new-looking indefinitely, and it will enhance the car's value at trade-in or resale time.

Ventilation is complete for year-around comfort in the Pacemaker. The rain-proof cowl ventilator takes in comparatively pure air from a point just in front of the windshield. This is in contrast to the front-end air intakes in many cars, which are almost in a direct line with the exhaust of cars ahead, making it possible for dangerous exhaust fumes to be drawn into the car at the point of driver and passengers; this is particularly noticeable in heavy, slow-moving traffic. Front doors are equipped with latch-type ventilating wings. All doors have adjustable windows regulated with crank-type controls.

Windshield of safety glass is gracefully curved to reduce reflections and glare and gives wide, full-view vision. The curvature and angle of mounting are scientifically engineered to eliminate the blind spots for both front and rear of the car, making it far superior to windshields with flat-glass surfaces. Having a projected length of 59 inches, it is one of the widest in the industry.