

Noteworthy Refinements Make Marmon Performance Exceptional

Built to the most exacting standards of mechanical excellence, the New Series Marmon 34 is a revelation in smoothness of operation and long life.



The testing of every piston ring for trueness, width and thickness is but one example of the close inspection methods which insure the perfection of every Marmon part

ALL that the Nordyke & Marmon Company has learned in sixty-nine years of experience in manufacturing fine machinery, in fourteen years' building of fine motor cars, and as the Champion Liberty Motor Builders, is embodied in the new series Marmon 34.

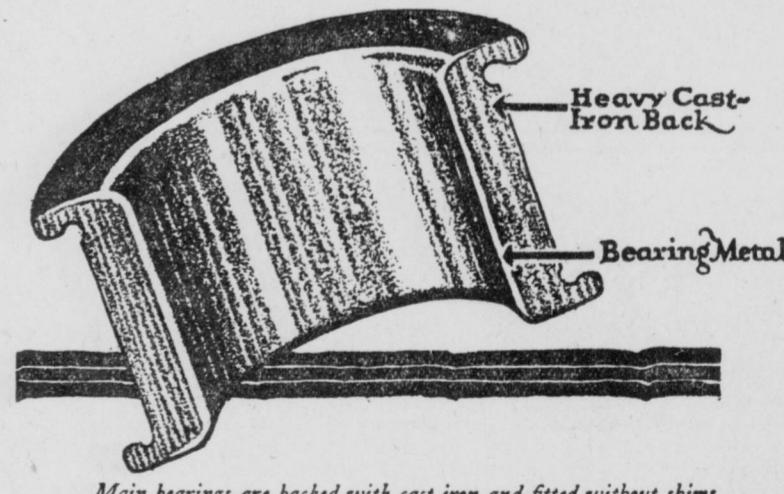
The car is built practically complete, from raw material to finished product, in the shops of this pioneer Indianapolis institution. Thus are maintained the uniform fineness of workmanship, the perfect proportioning and co-ordination of all parts, which characterize the new series.

The principles of light-weight, scientific construction introduced in the Marmon car four years ago are retained. There is little change in the noted light-weight, sturdy chassis, with its deep, pressed steel Z-section frame and its scientific spring suspension. With this basic superiority of design, and with its High Efficiency Motor, the new Marmon sets new standards of motor car performance.

THE HIGH EFFICIENCY MOTOR

The High Efficiency Motor is a development of the experience gained by Marmon engineers in building aircraft engines during the war. Refinements of crankshaft and bearing construction, of piston design, of valve operating mechanism and lubrication, combined with this accuracy and precision, have produced an exceptional power plant.

In order fully to appreciate how the Marmon engineers have profited by the lessons learned, it is necessary to ride in the new car—or better still, to drive it.



Main bearings are backed with cast iron and fitted without shims

There is a smooth, liquid flow of power which is exhilarating. The flexibility, the perfection of instant control—the "life" of the motor—give a new pleasure to driving. The engine will run smoothly at walking pace on "high." It easily gives you all the speed you want—65 to 70 miles an hour if you desire.

The pick-up is very rapid. The smoothness is unusual. As experienced drivers express it, "There isn't a rough spot in the motor." The transition from walking pace to a mile a minute—or more—is so smooth as to be deceptive. Little shifting of gears is necessary.

And with it all, the driver feels, at any speed, a practically unlimited reserve of power upon which he can draw instantly.

NOTABLE IMPROVEMENTS IN CRANKSHAFT AND BEARINGS

As before, aluminum is extensively employed in the six-cylinder, valve-in-head motor. The valves are 2 inches in diameter.

The main and connecting rod bearings of the crankshaft are long and of large diameter. The crankshaft itself is of unusual size and is hollow, playing an important part in the force-feed lubrication system. This shaft, revolving smoothly in the film of its large main bearings—2½ inches in diameter—is exceptionally strong and rigid. It is made of the same steel as the Liberty Motor shaft—a special alloy of extreme toughness. It must pass severe chemical and physical tests



Every Marmon connecting rod is machined all over and profiled to insure uniform light weight and perfect balance

for hardness, and rigid static and running tests, before it is passed by the inspectors. Its perfect balance has much to do with the smooth performance of the car.

BEARINGS HAVE CAST IRON BACKS

The main crankshaft bearings are backed with cast iron, which, expanding and contracting evenly with the crankshaft, maintains a uniform fit.

The main bearing caps and the connecting rod caps are mounted without shims. This is a great aid to proper lubrication and long life, because in these shimless bearings the crankshaft revolves in a film of oil and does not touch the bearing surface.

The forged steel connecting rods are machined all over and profiled to secure uniform light weight and perfect balance. This is only one example of the fineness of Marmon manufacture. Other parts of the Marmon motor are made with the same care. The resulting smoothness of operation not only increases the efficiency of the motor, but makes it an engine of long life.

The pistons are of a unique two-piece design, with an aluminum head and central structure for holding the wrist pin, and a cast iron skirt. This combination gives the advantages of aluminum—its lightness and freedom from carbonization, while the cast iron skirt, expanding uniformly with the cylinder walls, fits snugly and keeps oil out of the combustion chamber, eliminating carbon troubles.

A NEW SYSTEM OF LUBRICATION

The lubrication of the bearings furnishes another instance of advanced engineering. A gear pump forces oil under pressure through the crankshaft into main and connecting rod bearings before it reaches the automatic regulator, which acts on the vacuum principle and insures maximum oil pressure when the engine is working the hardest. At high speed 8 or 9 gallons of oil circulate through the crankshaft per minute. This cools the bearings as water cools the cylinders. A new design of rocker arm mounting provides perfect valve mechanism lubrication.

The car sets a new standard for accessibility. The valve springs and valve rocker arms, valve timing gears, the pistons and rings—all parts which it is necessary to get at, are accessible with a minimum of labor. The valves are adjusted by adjusting the rocker arms, and this is conveniently done while the engine is running.

The new design of intake manifold is thoroughly heated by special water jacketing, and there is an exhaust hot ring as well. This insures efficient carburetion and enables the motor to handle the low-grade fuel of the present day.

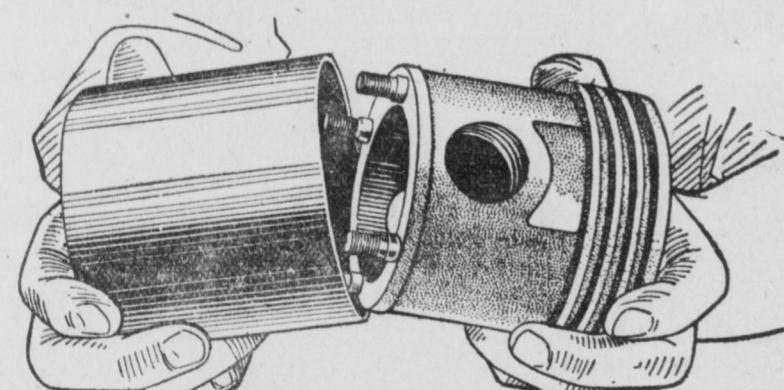
MARMON CLUTCH GIVES SMOOTH OPERATION

The use of a multiple disc clutch gives a smoothness of operation which, like the smoothness of the engine, must be experienced to be appreciated. The special three-speed-and-reverse selective type of transmission, built in the Marmon shops, is novel in the manner of its suspension and location. The rear axle is a Marmon product, both in design and construction. It is of the three-quarter floating type. Marmon steering, which has always been distinguished for its ease, is better than ever.

Another feature which is sure to be copied immediately is the placing of all the recording instruments in a group under glass on the board and illuminating them by indirect lighting.

The bodies of the new series are marked by refinements in upholstery, in trim, fittings and finish. The designs meet the most exacting standards of convenience and elegance.

The new series Marmon 34 will be on exhibition at the Indianapolis Automobile Show, which opens on Monday, March 8.



The pistons are of a unique two-piece design, with an aluminum head and central structure, and a cast iron skirt

NORDYKE & MARMON COMPANY, Indianapolis, U. S. A.

Local Branch:—Meridian and Eleventh Streets

Established 1851

Marmon Dealers in Indianapolis Territory: DIXIE MOTORS COMPANY, Evansville, Indiana; NORTHERN INDIANA MOTOR CAR COMPANY, Fort Wayne, Indiana; CHENOWETH AUTO COMPANY, Richmond, Indiana; J. T. J. GRAVES, Salem, Indiana