

10-h.p. MORRIS-OXFORD

(Two-Seater)

CABRIOLET COUPE.

Specification as follows —

Cabriolet Coupe body, fitted on De Luxe Chassis, made to open, painted to choice, luxuriously upholstered in Bedford Cord, equipment includes 5 best English Lamps spare Wheel and Tyre, Horn, Tool Roll and Tools, Jack, Pump and Oil-can, all control levers inside body

The MORRIS-OXFORD LIGHT CARS

Engine. — 10 h.p. specially designed **White & Poppe 4 cylinder water cooled** of high efficiency and made exclusively for us. 60 m m bore, 90 m m stroke, capable of running at high speeds without vibration, special attention having been paid to balance. Cylinders are cast en bloc, with inlet and exhaust manifolds cast integral with same, the exhaust being water cooled. Valves are arranged on either sides of the cylinders and are of exceptionally large diameter, they are operated by adjustable tappets which have fibre inserted, the whole being covered in by aluminium cover plates, easily detached, thereby silence is ensured. The crank shaft runs in white metal bearings of generous proportions backed with bronze bushes, the connecting rod big ends are similarly treated. The pistons have five rings fitted, one being used to prevent any possible side movement of the gudgeon pin. The timing gear wheels are situated just immediately forward of the fly-wheel from which they obtain a copious supply of oil, and having accurately cut teeth are quite noiseless. The bottom half of the crankcase is detachable to allow of inspection or adjustment. Government tax £5 5s 0d

Gear Box. — This is bolted on to the fly-wheel casing and together with the clutch, which is housed in the centre of the flywheel, completes the unit system of construction of the whole **power plant**, comprising engine, clutch, gear box, universal joint and spherical housing for torque tube. Three speeds and reverse are provided of the sliding type, they are operated by the usual side lever working in a gate, the lever is hinged at the bottom to enable it to operate the arrangement of selector springs which lock the respective gears, this arrangement is delightfully easy and smooth to manipulate. The gear wheels are mounted on short stiff castellated shafts which rotate on annular type ball bearings. Special attention has been paid to the design of this gear box to aid the easy removal of same from the power unit without disturbing other parts, by the simple method of carrying the gear shafts on a shell or cartridge which is inserted at the back end of the power unit and is flanged to allow it to be bolted to the back of the outer casing of unit, and the same bolts are also adapted to hold the spherical housing which carries the torque tube and forms the back cover of the gear box, thus completing the power unit, which is carried in the chassis by three point suspension. A large cover is fitted at the top for inspection of gears, this is quickly detachable. Lubrication is carried out by the fly-wheel, the gears using the same oil as the engine. (See Lubrication)

The gear ratios give the following speeds

1st speed	5½	miles per hour at 1000 revolutions per minute
2nd speed	10½	" " " 1000 " "
3rd speed	17¼	" " " 1000 " "

Clutch. — This is of the latest pattern multiple disc type, situated in the centre of the solid steel engine fly-wheel, it is composed of thirty-six alternate plates of hardened steel and bronze, provision for adjustment of spring pressure is made. A clutch-stop is also provided. The abnormally smooth action of this clutch has to be tried to be fully appreciated

Lubrication. — Is carried out by the flywheel, which when rotating acts like a centrifugal pump as all the oil in the engine, clutch case and gear box gravitates to the bottom of the fly-wheel pit, where it is picked up by the fly-wheel and distributed under considerable

pressure through pipes of large diameter to the various points of application, so a constant circulation is kept up. A level indicator is provided on the left side of the crankcase to show at a glance the amount of oil in the sump. Sufficient oil is carried in the sump for 200 miles without replenishment.



SPECIFICATION.— *continued.*

Ignition.—By high tension variable magneto of latest type, water and dustproof, the wiring neatly arranged, the four high wires being tension carried in an aluminium tube; the switch is fixed in a convenient position on the dashboard.

Carburettor.—This is the well-known **White & Poppe float feed**, entirely automatic at all engine speeds, quick to accelerate and gives good petrol consumption and slow running. The throttle is controlled by accelerator plunger pedal only, and it can be set to any degree of opening by half a turn of the accelerator plunger without the driver leaving his seat.

Transmission.—By propellor shaft, which is enclosed in a rigid torque tube. Only one universal joint is provided, this is of the ring type of large size, it is oiled very efficiently from the gear box due to the main shaft from gear box being hollow; the whole universal joint runs inside the ball shape head of the torque tube, thus fully protected from dirt and wet. The torque tube head pivots in its spherical housing which is bolted to the back of the gear box, thus performing the dual function of torque and radius rods. The propellor shaft inside takes the power from the universal joint by castellation, and has the worm for back axle drive at the other end. The whole combined arrangement with engine and gear box forming an entirely dust-proof and water-tight drive throughout the whole transmission.

Rear Axle.—This is of the built-up type giving lightness and rigidity, consistent with strength, the axle tubes being tapered and of forged steel, bolted to the centre casing which carries the worm drive of latest design and very high efficiency, ball bearings throughout, with large ball thrusts where necessary. The differential gear is of the two pinion bevel gear type. Large filling orifice is provided at the back of axle casing to enable oil to be easily added. This orifice is plugged with a screw cap and acts as an oil level indicator. A draw off plug is fitted at the lowest point of the axle casing, an airvent plug is inserted at the top of casing to assist cool running; ample provision of guard washers are fitted at both ends of axle shafts to prevent oil leaking out on to wheels and brakes. The axle shafts are castellated to provide the drive from the differential, and to facilitate ease of removal should it ever be found necessary.

Front Axle.—One piece drop forged H section steel, the swivel axle arms are provided with ball thrusts, the swivel axle arm pins are carefully hardened and ground and drilled hollow for free passage of grease from the screw down grease cup fixed at the top. The steering arm, which connects by ball joint coupling rod to steering gear, is arranged to travel above the axle thus ensuring the safety of this vital part under the worst conditions. The wheel hubs run on ball bearings and are provided with a special form of safety cage which would prevent the wheel coming off even in the rare event of the ball races breaking up. Special attention is paid to the prevention of wet and dirt intruding into the hub and corroding the ball races. A solid adjustable tie-rod is fitted for ease of correction of alignment of wheels if necessary at any time. A very much greater turning-lock is embodied than previously and the lock is stopped off by lugs forged integral with the steering arms which come in contact with the axle at the correct distance and prevent the danger of damage to tyres.

Steering Gear.—Worm and worm wheel type, irreversible, contained in aluminium dust-proof and oil-tight box, large bronze bushes are fitted to moving parts, adjustment for end play is provided, the whole gear is rigidly bolted to the power unit and column



raked to a comfortable angle. A large patent xylonite covered steering wheel, with aluminium centre and spokes is included. A large steady flange fixed to the floor board of the body assists to provide absolute rigidity of the whole gear.

Radiator.—This is of a unique and distinctive rounded V shape of special design and high efficiency, the cooling is on the thermo-syphon principle, and with the assistance of large water pipes and correct arrangement of water levels, the design is sufficiently effective to enable a fan to be dispensed with. A fan can be fitted as an extra if desired for use in tropical climates.

Frame.—Deep channel section pressed steel, with suitable cross members, and of generous robust construction.

Chassis.—Wheelbase, 7ft. 6in. Track, 3ft. 9in. Length over all, 11ft. Width (over hub caps), 4ft. 2in. Ground clearance, 8½in. Length from dash to end of frame, 6ft. 4in. Width of frame, 2ft. Back axle gear ratio, 4.6 to 1.

Bearings.—Hoffman ball bearings are fitted to gear box, road wheels, and axles.

Brakes.—Two sets of internal expanding, side by side, independently operating brakes, all contained in drums on the rear wheels and actuated respectively by hand side lever and foot pedal, they are lined ferodo and great care has been exercised to provide for exclusion of dust. All spindles have oilers fitted, by the use of which rusting up is prevented. All the brake connections are solid rods, with straight pull, and all operating levers are fitted to their shafts by castellations. Adjustment for wear can be taken up by the hand with the use of self-locking fly-nuts as fitted.

Suspension.—Semi-elliptic springs to front, 32in. long, ¼-elliptic springs to rear, 40in. long, every shackle bolt being hardened and ground and fitted with large screw down lubricator, this combination gives wonderful smoothness in running under all circumstances. Rear springs are hung beneath back axle.

Wheels.—Detachable hollow pressed steel wheels, together with spare wheel are fitted, size 700 x 80; these are light and practically indestructible.

Tyres.—Dunlop car tyres, 700 x 80. 2 grooved on rear wheels. 3 plain. All fitted with bolt valves.

Body.—Elegant 2-seater flush side torpedo body on most up-to-date lines, with high sides and plenty of width, 42in. Carefully constructed to give the maximum comfort. Painted dark green or grey upholstered green leather. Fittings brass finish. Large tool box at back. *See illustration on opposite page.*

Equipment.—Best quality cape cart hood, one piece adjustable all metal "Auster" wind screen. Five best English manufacture lamps, comprising two self contained Mangin lens mirror headlamps, oil side and tail lamps, horn, tyre pump, jack, tools, and spare wheel and plain tyre.

Price of Chassis including Five Wheels and Tyres, Petrol Tank, Bonnet and Tool Kit with Jack and Pump.

Weight - 12½ cwt.



The MORRIS-OXFORD LIGHT CARS

THE MORRIS - OXFORD LIGHT CAR.

FOREWORD.

MESSRS. W.R.M. MOTORS, Ltd., consistent aim has been to produce a car of low price to meet every requirement of the most discriminating buyer. Quality is their first consideration—good materials in the construction of a car mean efficiency and durability in the working—careful design, by practical men who are also users with years of road experience, do undoubtedly help to eliminate all those small annoyances which are so often found on cars. Accessibility has been carefully studied, and is beyond reproach; every part of the Morris-Oxford Car is purchased from Specialists and assembled in our own Works under the careful supervision of Experts, after first undergoing rigid tests for accuracy in every detail; the result is a car of super-excellence at a moderate price.

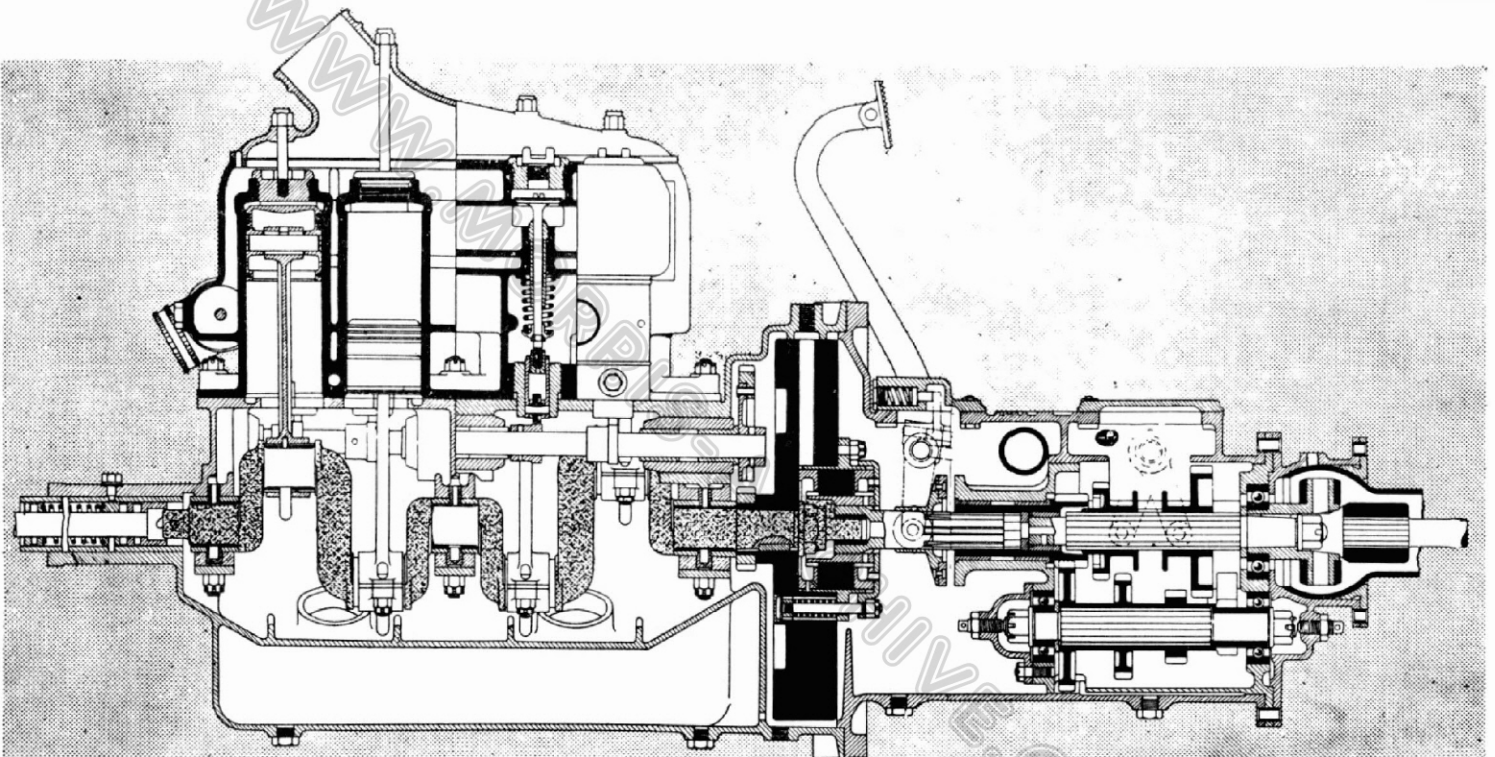
The price paid for good material, which in our case is always the highest price, is bound to prove finally to be an investment yielding interest, because the car lasts very much longer and requires little or no repairs, as it bears the names of many firms of high repute in the Automobile industry, and backed by our reputation acquired by careful study of the users' requirements, the great question of depreciation becomes almost nil. To dwell in detail on all the notable features of our car would involve much repetition concerning the care taken in every process, and through all the stages of manufacture, so it must suffice to say that the best materials obtainable are used in its construction.

Those who have been conversant with our car during 1914 will not find any radical change in design in the following pages, not that we would discourage innovation, as every modification or change that promises for the better receives most careful consideration, but we will not make changes for the sake of coming into line with others, after having produced in the previous year a car which has proved so successful from every point of view. It must not however be imagined that we are reposing on a reputation gained from past achievement; we realise that the keenness of modern competition must be dealt with in one of two ways, namely—by a reduction in price, or by improvement in the hundred and one details of a car and increased value—and we feel confident we are right in choosing the latter, therefore your careful perusal of the following pages is bound to

repay you, and furthermore, the whole of the reading matter has as far as possible been couched in non-technical terms.



The MORRIS-OXFORD LIGHT CARS



Sectional elevation of complete power-unit.

as fitted to both De Luxe and Popular Models.

