The New

MARK V

JAGUAR

ON 3½ AND 2½ LITRE CHASSIS

Preliminary Announcement

SALIENT FEATURES OF THE MARK V JAGUAR

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THE following brief outline is confined to technical aspects of the new Mark V Jaguar chassis; the appearance, furnishings and appointments of the entire car being immediately apparent upon examination.

The frame of the Mark V is scientifically designed and, for its weight, is probably the most rigid frame incorporated in any passenger car. The side members, which take the beam loading, are straight in both planes, which eliminates any torsional deflection due to direct bending loads. They have a maximum section at the dash line of 6½" deep by 3⅜" wide, tapering away to the front and the back. Torsional rigidity is supplied by the 7" deep channel section cross bracing which takes the torsional load from corner to corner in direct bending.

In addition, a heavy box section front cross member, which is also straight and in the same plane as the side members, gives the maximum possible rigidity to the front end. The rear of the frame is swept up over the rear axle to allow for the increased axle movement required by the more flexible suspension. Electric arc welding is extensively used at all major joints, and finally the complete frame is given a special protective treatment against rust or corrosion.

Independent front wheel suspension is introduced by Jaguar for the first time on the Mark V chassis. The original designs were carried out in 1938, and continuous tests and development work has been carried on throughout the ensuing period. The following notes indicate the salient points of the new suspension system :

(1) The wheels are controlled by transverse wish-bones, rigidly mounted above and below the main side member section.

(2) The spring is in the form of a silico-manganese steel torsion bar, over 51" long. The advantage of this type of springing over other forms is the accuracy with which it may be manufactured, and the complete absence of friction. The exceptional length of the spring permits a low stress to be used and ensures practically unlimited life.

(3) The stub axle is carried on ball joints at the outer end of the top and bottom wish-bone. These joints are naturally self-adjusting and eliminate the trouble frequently experienced with other forms of front axles where slackness, or play, can develop in the knuckle joints. Furthermore, the ball pins have a hard chrome surface and the cup is in a special graphitic bronze. This combination gives an ideal bearing surface, capable of withstanding extreme abuse and retaining its extraordinarily low coefficient of friction under all conditions, ensuring accuracy and lightness in steering control.

(4) The mounting of the torsion bar is arranged so that this is entirely free from any bending stress caused by braking or any other extraneous force. The mounting is also such that a bar can be rapidly changed without disturbing any other part of the suspension. The screw adjustment at the rear end of the bar is provided so that the bar can be correctly tensioned without the use of any special equipment.

(5) Hydraulic shock absorbers act directly on the main suspension arm, ensuring the exact degree of fluid friction necessary to damp out the excess movement.

(6) The lower wish-bone is constructed of a deep "I" section steel forging which carries the load to the torsion bar. This is braced by a strong tubular strut, giving wide base mounting into the frame.

(7) The stub axle shaft is a high tensile steel stamping, securely fixed on a taper into the stub axle carrier, which eliminates the high stress of the sharp corner which always occurs with a single-piece forging. This shaft carries the hub on two large taper roller bearings, adequately sealed against dirt or moisture.

The design of the Jaguar independent front suspension has been perfected only after due consideration of other factors affecting comfort, ease of control and stability. Thus, special attention has been given to the rear suspension which is by long flexible leaf springs having periodicity rates balanced with those of the front suspension. Further, the large section Dunlop super-comfort tyres (6.70" × 16"), fitted on 5" wide base rims, afford the maximum cushioning effect combined with complete stability under stress of cornering at high speed.

The combination of all the foregoing points of design connected with suspension results in a soft ride with a complete absence of pitch or bounce. Moreover, the road holding and cornering stability, which has for so long characterised the Jaguar, is not only retained but is actually improved.

Burman recirculating ball type steering is employed. This high efficiency steering gives effortless operation and at the same time positive control at the high speeds of which the car is capable. The box is rigidly mounted on the suspension posts far forward, giving the ideal steering wheel position which has always been a characteristic of the Jaguar car. A single tube connects the steering drop-arm to the idle lever on the other side of the chassis. From the end of this tube, short links, accurately set to length to ensure ideal steering geometry, connect to the short stiff steering arms mounted on the stub axle. Although the steering is light and accurate at high speeds, there is an entire absence of steering kick.

The full hydraulic braking system incorporates the two leading shoe principle and operates on all four wheels. Hydraulic application ensures that the correct balance of braking effort is applied at each wheel without the frictional variations which can occur on mechanically operated systems. The large area of the friction surface (184 sq. ins. lining area) (340 sq. ins. working drum area) ensures long life and freedom from fade, even under the most exacting conditions. A hand lever operates the rear wheel brakes through an entirely separate linkage.

The four-speed single helical box embodies a number of internal improvements in design which ensures silence and complete immunity from the troubles which are often associated with transmission. The intermediate gears and layshaft are mounted on needle roller bearings, whilst two large ball bearings and a roller bearing carry the primary and main shaft. The reverse shaft has been stiffened up and the bearing increased in diameter. A two-piece propeller shaft enables a flat floor line to be used in the rear of the car, the centre bearing being insulated in rubber against noise or vibrations.

Representing, as it does, long years of development and trial, the Jaguar Mark V is presented with pride and confidence as a worthy successor to a car which has fully earned the description of being the finest car of its class in the world.

MARK V

GENERAL SPECIFICATION

ENGINE. Six cylinder Jaguar Mark 3½ Litre; 82 mm. bore × 110 mm. stroke; 3,485 c.c. (2½ Litre 73 mm. bore × 106 mm. stroke; 2,663.7 c.c.) overhead large diameter valves, push rod operated; 2¼" diameter counter weighted crankshaft carried in seven large precision made steel backed bearings; connecting rods of light alloy; chrome-iron cylinder block; detachable head; compression ratio (3½ Litre) 7.75; (2½ Litre) 7.3; cooling by pump circulation with by-pass thermostat control; submerged oil pump; forced lubrication throughout; complete circulation through Tecalemit oil filter; special Lucas de luxe coil and distributor ignition system; twin S.U. carburettors with electrically controlled automatic choke; dual exhaust system incorporating Burgess silencers.

FRAME. Straight plane steel box section frame of immense strength and stiffness. Torsional rigidity is ensured by 7" deep channel cross bracings with heavy box section front cross member.

TRANSMISSION. Four-speed synchromesh gearbox of improved design. Single helical gears with strengthened teeth mounted in needle roller bearings. Gear ratios: (3½ Litre) 1st, 14.5; 2nd, 8.52; 3rd, 5.87; top, 4.3: (2½ Litre) 1st, 15.35; 2nd, 9.01; 3rd, 6.21; top, 4.55. Hardy Spicer all metal divided propeller shaft. Borg and Beck 10" diameter single dry plate clutch (9" diameter on 2½ Litre). Centrally placed gear lever with remote control.

SUSPENSION. Independent front suspension incorporating wish-bone and torsion bar principle. Hydraulic shock absorbers. Rear suspension by long silico-manganese steel leaf springs, controlled by Girling PV.7 hydraulic dampers.

BRAKES. Two leading shoe brakes with 12" diameter Millenite drums. Friction lining area, 184 square inches. Drums fitted with cooling ducts. Pistol grip handbrake on rear wheels only through separate linkage.

STEERING. Burman re-circulating ball type steering, light yet accurate at all speeds. Bluemel adjustable steering wheel.

WHEELS AND TYRES. Heavily dished pressed steel bolt on type with wide base rim to carry Dunlop super-comfort 6.70" × 16" tyres.

FUEL SUPPLY. By two electric pumps (one pump on 2½ Litre) from 14 gallon rear tank with reserve supply. Petrol filler cap concealed in rear wing.

ELECTRIC EQUIPMENT. Lucas de luxe throughout; 12 volt set with ventilated dynamo; 64 amp. capacity battery, 10 hour discharge; built-in head lamps and wing lamps; two fog lamps; stop light; reverse light; twin rear lights; two interior lights with extra door-controlled interior illumination; twin blended note horns; twin bladed independently operated screen wiper; cigar lighter.

INSTRUMENTS. 5" diameter 120 m.p.h. speedometer; 5" diameter revolution counter; ammeter; oil pressure gauge; water temperature gauge; petrol gauge; clock; self-cancelling trafficators with warning light.

AIR CONDITIONING. Built-in air conditioning unit incorporating de-froster and de-mister. Improved system of induction provides cold filtered air taken from outside car for cooling interior during hot weather.

UPHOLSTERY AND CARPETING. Upholstered throughout in finest quality Vaumol leather hide and Dunlopillo. Flat floor is thickly carpeted over felt underlay.

SEATING. Front bucket seats adjustable for height and reach. Heavily padded folding central arm-rest in rear compartment. Heavily padded shoulder rests.

INTERIOR APPOINTMENTS. Garnish rails, window frames and instrument panels are of fine quality wood in polished figured walnut finish; press button door handles; capacious soft leather door pockets with zip fasteners; large cubby lockers, one fitted with lock and key.

SPARE WHEELS AND TOOLS. Spare wheel is carried in special compartment beneath luggage locker. Tools are housed individually in specially shaped soundproof container in rear locker lid fitted with automatic light.

LUGGAGE ACCOMMODATION. Ample accommodation is provided in the large rear locker, the lid of which may be lowered to form platform for additional luggage. Platform and locker interior highly polished and fitted with raised rubber protector strips.

EASY JACKING. Any wheel may be raised clear of the ground with the minimum of effort in 10 seconds by means of special easy-lift jack.

PRINCIPAL DIMENSIONS. Wheel base, 10' 0"; track front, 4' 8"; rear, 4' 9½"; overall length, 15' 7"; overall width, 5' 8½"; overall height, 5' 2½"; unladen turning circle, 37' 0"; dry weight, 32 cwts. (approx.).

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The Realisation o

WITH many developments of entirely new design added to proven features which have been retained, the new Jaguar is a brilliant successor to a long line of distinguished forerunners.

Each of its many new features has been developed after many years of patient research and stringent tests commenced, in many cases, in the years before the war. Thus, the new independent front suspension, the new frame, the new hydraulic brakes and the new transmission system have not been hurriedly designed merely to keep abreast of a trend but have undergone long and arduous trial until perfection has been assured.

Amongst the many new features and improvements are :—Independent front suspension ; fully hydraulic two leading shoe Girling brakes ; entirely new frame ; new Burman steering ; new transmission system ; longer rear springs with new PV.7 Girling dampers ; pressed steel wide rim base wheels fitted with Dunlop 6.70" × 16" super-comfort tyres ; increased interior dimensions ; flat floor ; increased all-round visibility ; built-in head lamps ; new instrument panel illuminated by infra-red ray ; twin bumpers with overriders ; concealed door hinges ; press button door handles ; new and improved air conditioning system ; dust free zip fastener door pockets.

In the graceful flowing lines of the new Jaguar, no startling departure has been made from the dignity and good taste which critics the world over have declared to be inherent characteristics of Jaguar design.

The new Jaguar is a better Jaguar, a finer looking Jaguar, but is still, unmistakably, a Jaguar, and is now, more than ever, the finest car of its class in the world.

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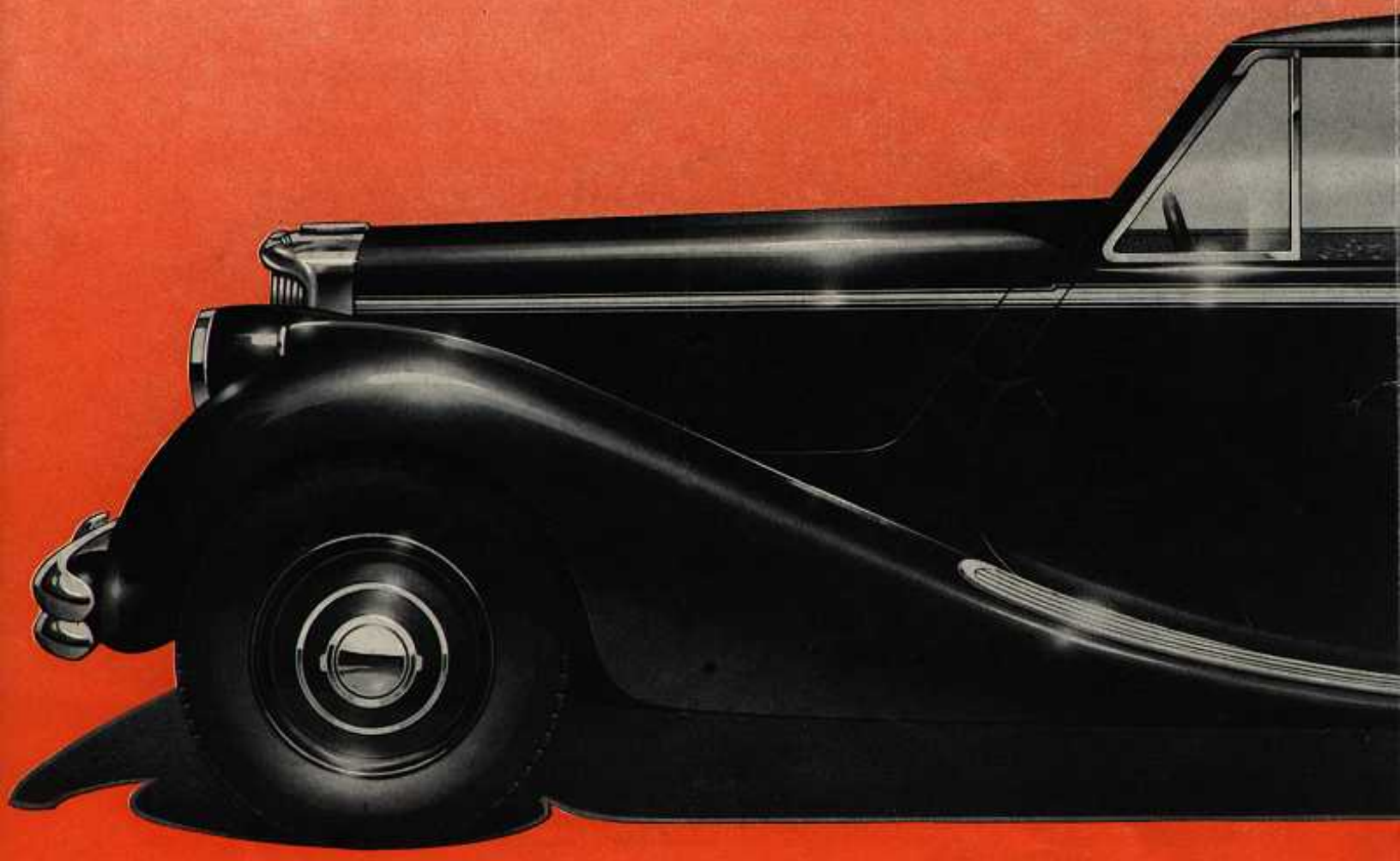

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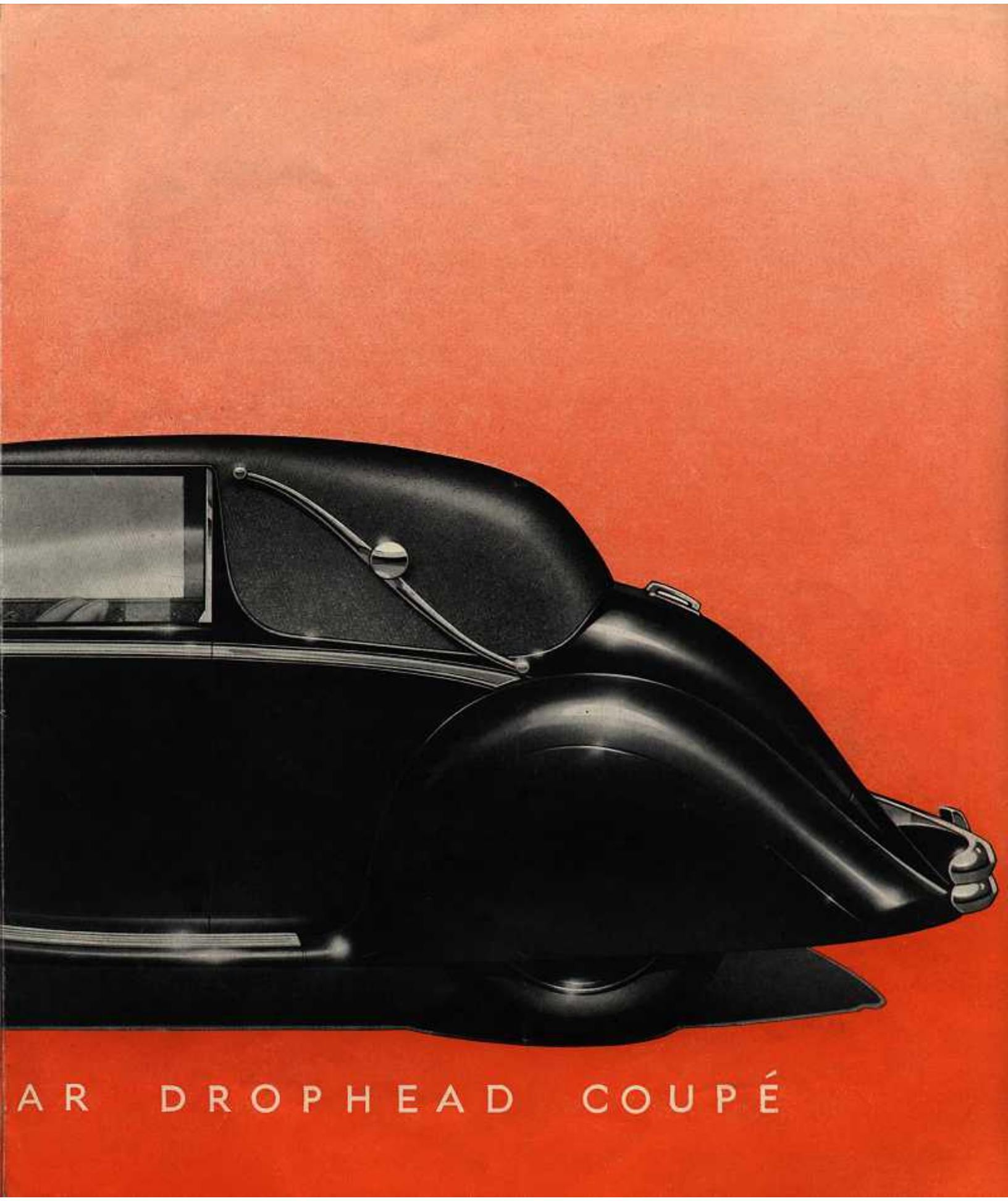
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