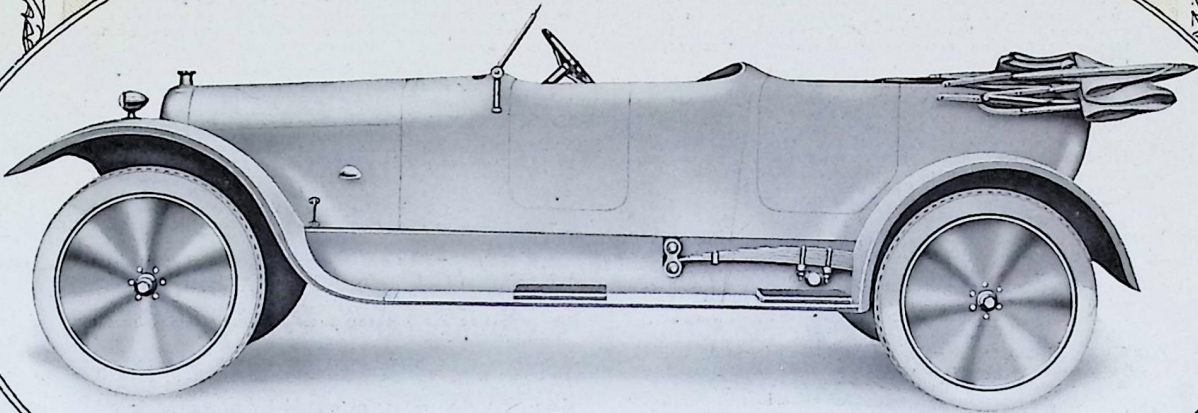


Sir Wm. Angus,  
Sanderson & Co.  
*Limited.*



"The Angus-Sanderson Car makes a hit—and a palpable hit."  
—*The Motor.*

Price

£575

# Angus-Sanderson

## 14 H.P. de Luxe

Four-seater model, painted grey, leather upholstery to match, complete with one-man hood, wind-screen, five detachable steel disc wheels (with tyre to spare wheel), Lucas' dynamo electric lighting set (with five lamps), Lucas' electric engine starter. Horn and set of tools, including jack. Five 815 m.m. × 105 m.m. Wood-Milne rubber non-skid tyres.

**SIR WM. ANGUS, SANDERSON & CO. LTD.**

BIRTLEY

::

CO. DURHAM

TELEPHONE: BIRTLEY 53  
(4 LINES)

TELEGRAMS: "ANGUSAN, BIRTLEY."

# Angus-Sanderson

## 14 H.P. de Luxe Chassis Specification

**FRAME.**—Pressed steel. Upswept rear.

**ENGINE.**—Four-cylinder monobloc type, 3 in. (76 m.m.) bore by 5 in. (127 m.m.) stroke, R.A.C. rating of 14.2 H.P. It is provided with an extended sump forming the clutch pit, and is arranged for attachment of the gear box at the rear end. Three-point suspension. The two front arms are cast integral with the cylinder and crankcase block, the rear support being arranged on the gear box or cross-frame member.

**CYLINDER AND CRANKCASE BLOCK.**—This is a one-piece casting of special grade iron, in which are arranged the four cylinder bores, with their respective valve ports and chambers. It is extended to form the top half of the crankcase, in which is accommodated the crankshaft and magneto drive housings. The valves are arranged on the rear side, and are operated from a single camshaft. Ample water jacket space is provided around the cylinders, and particular attention has been given to the design of the passages around the valves.

**CYLINDER HEAD.**—This is an iron casting arranged to cover the whole of the cylinder head, and carries in itself the combustion chamber for each cylinder. It is amply water-jacketed, and has cast integral with it the water outlet pipe. The head can be removed complete, for examination and cleaning purposes, without removing any other details of the engine.

**CRANKCASE SUMP.**—The sump is arranged to form the bottom half of the crankcase. It is an aluminium casting, provided with an extension forming a clutch housing, and arranged with provision to carry the clutch, foot brake, and accelerator pedal gear, and for the attachment of the gear box at the rear end. The engine, clutch, gear box, and control gear are therefore assembled as one complete unit, capable of being removed from the chassis without disturbing any essential adjustments.

**CRANKSHAFT.**—This is a solid, drop-forged, three-bearing shaft, having ample bearing surfaces. The dimensions of the big end bearings are 1½ in. diameter by 1½ in. long, and the main bearings are 2 in. diameter by 2½ in. long. The shaft is drilled throughout for forced lubrication.

**CRANKSHAFT MAIN BEARINGS.**—These are arranged as separate blocks, bolted to the crankcase and cylinder block. They are white metal lined, and provided with suitable oil channels for collecting and distributing the oil to the big ends. Each bearing block is interchangeable with the other.

**CONNECTING RODS.**—These are made from solid drop forgings of "H" section. The big end bearing of white metal is run directly into the rod. The small end is arranged to retain a floating bush. This bush takes a bearing on both its inside and outside diameters, and is allowed to float freely, laterally and circumferentially, to distribute the wear evenly over the gudgeon pin.

**PISTON.**—The piston is of the "Ricardo" separated head, slipper type. Complete with rings and gudgeon weighing 12 ozs.

**CAMSHAFT.**—This is of special steel, with cams formed solid on the shaft. The cams are arranged to operate the whole of the valves, and the plunger oil pump in addition.

**TIMING GEARS.**—There are three gears completing the whole of the timing drive and of 45 deg. helical form.

**VALVES.**—These are nickel steel, with head and stem formed solid. The stem is ground throughout the whole of its length.

**TAPPETS.**—These are mild steel, case-hardened and ground all over. They are provided with a mushroom end, with adjustable, hardened heads. The whole of the tappet mechanism is enclosed by an oil-tight inspection door, and is open to the interior of the crankcase for lubrication.

**TAPPET GUIDES.**—These are arranged as two detachable units, each carrying four tappets, and capable of being removed through the inspection door.

**IGNITION.**—High-tension magneto.

**HAND STARTING GEAR.**—An emergency detachable starting handle is provided.

**INDUCTION AND EXHAUST MANIFOLD.**—This is a one-piece iron casting, bolted direct to the side of the cylinder, with a hot spot to assist vaporisation.

**LUBRICATION SYSTEM.**—The lubrication is of the pressure feed type, the oil in the sump being drawn through a strainer, and circulated by a plunger pump, driven direct from the camshaft, through an external filter, to the main bearings, and from thence to the big ends. The filter is arranged in an accessible position on the outside of the

crankcase, and is capable of easy removal for cleaning. A relief valve is provided, which discharges oil continuously over the timing gears. This relief valve is capable of easy inspection and removal through the tappet gear cover.

**OIL FILLER AND VENT.**—A combination oil filler and vent pipe is provided, in an accessible position in the off-side engine arm, and is of ample dimensions for both filling and ventilating purposes.

**OIL LEVEL INDICATOR.**—A removable blade type oil level indicator is arranged in a convenient position to the oil filler.

**WATER CIRCULATION.**—Thermo-syphon.

**FLYWHEEL AND CLUTCH.**—The flywheel has teeth provided on its periphery, to engage the starting motor, and arranged on the internal diameter to accommodate a cone clutch. The clutch cone is an aluminium casting, capable of easy removal. It is operated by means of a central spring, and provided with a ball race to take end thrust.

**PEDAL GEAR.**—Foot pedals are provided and carried on the extension of the crankcase slump, and arranged to operate the clutch, foot brake and throttle accelerator. The clutch pedal operates through a double drop lever pushing on to a ball thrust race. An adjustable circular clutch brake is provided.

**GEAR BOX.**—The gear box is three speeds and reverse:—Top, direct, 4.2-1; second, 6.8-1; third, 13.8-1; reverse, 1.84-1.

Gate change by means of central lever. Automatic lock ensures that two gears can never be engaged at the same time. Gear box can be dismantled without removing same from chassis. One oil filler supplies the whole of gear box and universal joint. There are no greasers. The castellated shafts are ground all over so that the gear change is as easy as it is mechanically possible to make it.

**TRANSMISSION.**—Transmission by cardan shaft and universal joint (at gear box end) are both enclosed in a torque tube.

**REAR AXLE.**—Wrigley's Patent. The rear axle can be entirely dismantled without jacking up the car or removing any other piece of mechanism. It is self-lubricating and mounted on ball or roller bearings throughout. There are no projecting parts to hold mud, and no brake adjustments to be made underneath the car.

**FRONT AXLE.**—Wrigley's Patent. The axle bed is a straight "H" section stamping. The axle heads only need lubricating at one point with moderately thin oil. All the joints, bearings, etc., are fed with oil from the central reservoir. The roller bearings are absolutely mud and dust-proof.

**STEERING.**—Steering by worm and wheel. Four positions of wheel provided to compensate for wear. Only one point to lubricate.

**BRAKES.**—Both brakes are on the rear wheels, and are of the internal expanding type. The brake drums are detachable like the road wheels.

**CONTROL LEVERS.**—Control levers are independent of the steering wheel, being spring loaded and having no quadrants.

**SPRINGING.**—Front, semi-elliptical; rear, cantilever; manufactured by Woodhead's, of Leeds.

**ROAD WHEELS.**—Five disc steel wheels of special design, giving strength with extra lightness. Easily detachable.

**TYRES.**—Heavy pattern Wood-Milne, 815 by 105 m.m. on all five wheels.

**WHEEL BASE.**—10 ft. Track, 4 ft. 4 in.

**WINGS.**—The wings are of the dome-shaped type.

**STEPS.**—Specially designed corrugated platform steps are provided, attached to the chassis by means of pressed steel brackets.

**UPHOLSTERING.**—The body is upholstered throughout in leather, squabs, cushions, etc., being made up from grey enamel motor hides. The cushions being built up on special mattresses, springs made up of coil springs, and woven wire frames. The upholstery on the doors is so arranged to form flaps to protect the pockets from the weather. The floor of the rear portion is fitted with removable carpet, and the front foot-board covered with lino.

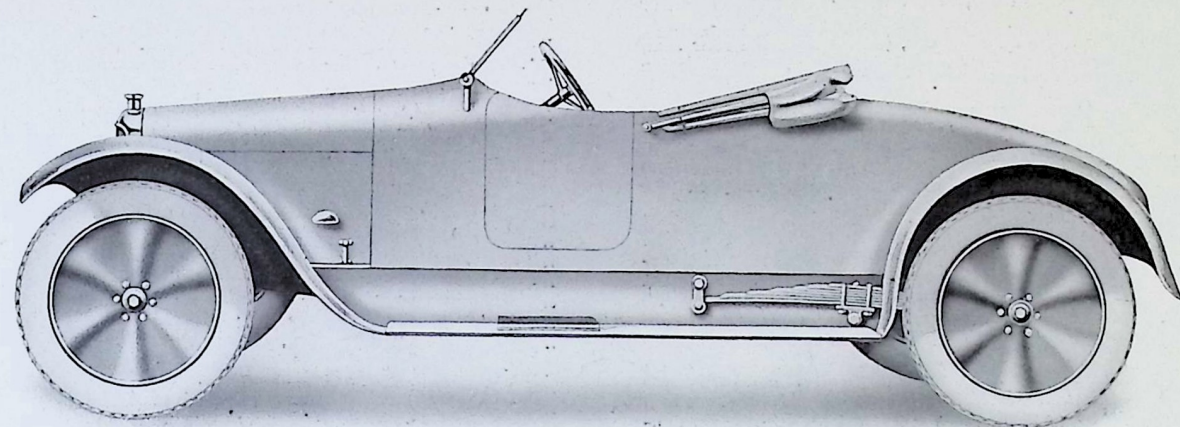
**PAINTING.**—The car is painted throughout in elephant grey, this being a special shade of dark grey particularly suited to the streamline effect of this car.

The specification given in this list is subject to alteration, and the Company reserves the right to alter list prices, customers being given the option of confirming or cancelling their orders at the new prices.

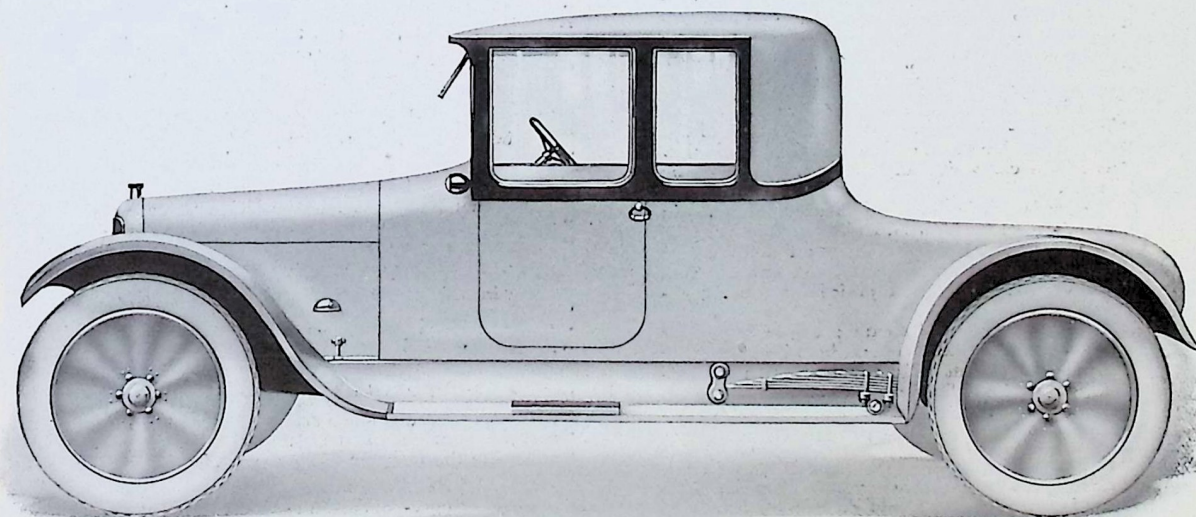
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## 14 H.P. de Luxe



Two-seater model, with hood, wind-screen, five detachable steel disc wheels (with tyre to spare wheel), Lucas' dynamo electric set (with five lamps), Lucas' electric engine starter. Horn and set of tools including jack. Five 815 x 105 Wood-Milne rubber non-skid tyres. Wide dickey seat, well upholstered. Price £575



Two-seated Coupé, capable of being used open or closed, with dickey seat. Equipment same as two and four seater models. Price £750

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# Angus-Sanderson

## EXTRACTS FROM THE PRESS

### THE TIMES.

"Buyers of this composite car will have the advantage of the combined brains, experience, and manufacturing resources of a number of firms, each already a specialist in its own line, and with a long and successful record behind it."

### Mr. S. F. EDGE, in THE AUTO, writes:—

"I really cannot remember a more satisfactory ride in a car, of no matter what wheelbase or price. It was emphatically the sweetest-running and best-sprung car, judged from the rear seat, in which ever I have been driven. Its suspension was a revelation. This car is a real competitor with the best examples of value for money which America or any other country can send us, and I look confidently forward to seeing it do a great deal to rehabilitate British motor engineering in the opinion of buyers overseas."

### THE MOTOR.

"We were definitely pleased with our first experience of the Angus-Sanderson car. From start to finish it is a first-rate production. There is no doubt about the matter. It is not a question of opinion. The car is a good one—a particularly good one. Smooth, silent, fast, comfortable, handsome, economical, lively, and easy to handle—there it is, in so many words. From every standpoint, our practical experience confirms our initial deductions. The Angus-Sanderson car is a hit—and a palpable hit."

### THE AUTO.

"Apart from its handsomeness of turnout and fullness of equipment, this car is faster (on an average, during a 300-mile run) than a British car nearly three times the price and twice the combustion space. In view of the dimensions of the motor, and the fact that the car ran with a party of four in occupation, maintaining a 25 m.p.h. average on the round trip, should suffice to stamp it as something very good at any figure, and really excellent at its price."

### THE IRISH TIMES.

"The Angus-Sanderson need have no fear of the dangers of American competition in the Colonies, as it is a car which any Britisher may well be proud. The car is rightly described as a car de luxe, as in style, appearance, finish, and equipment, it is the embodiment of beauty. After an exciting trial through County Dublin yesterday, one can find nothing but the highest praise for the Angus-Sanderson. It runs smoothly and silently; it quickly gathers speed without making a fuss about it; it is easily handled; and its petrol consumption is surprisingly little. Thus comfort and economy go hand-in-hand."

### THE MOTOR NEWS.

"I have had an opportunity of a trial run on this remarkable car, and was much impressed. The car is quite fast—it would do about 50, I think (that's a cautious and legal way of putting it). The engine ran smoothly and without periodic vibration, the gear changes were easy, the clutch smooth, and the braking quite satisfactory. The springing is very good, and the body comfortable."

### THE AUTOCAR.

"The engine pulls well on long hills, and is capable of very high speeds on the level without undue vibration. It is possible to crawl in traffic on top gear and get up speed again, smoothly and quickly, without changing down."

### THE DAILY EXPRESS.

"The car has ample turn of speed, as on a good, clear, level road about 50 miles an hour can be achieved. At all normal touring speeds there is a good reserve of power, and the running is very 'sweet.' The transmission gear, in general, leaves nothing to be desired, while the final drive is exceptionally quiet. One may speak in equally happy vein in regard to the suspension, some execrable war-worn roads being traversed with a minimum of jolting."

### DAILY MAIL.

"The average motorist is wise when he chooses a chassis in which is fitted an engine constructed by a firm which has specialised in engine-making. The primary result of this tendency to specialise in the manufacture of the various parts is, beyond doubt, increased efficiency, and the production of cars would be increased enormously and the cost decreased proportionately."

### ILLUSTRATED LONDON NEWS.

"In every detail the car bears the impress of careful thought. It is a real 'quality' car, and will eventually be one of the most popular British motor vehicles."

### ILLUSTRATED SPORTING & DRAMATIC NEWS.

"Accessibility has been given a place of primary importance, the result being that it is possible to take the whole of the car to pieces without removing the road wheels or the body, also without the need of a pit in the garage. In doing this no mechanical feature has been sacrificed."

### LADIES' FIELD.

"If the designers had the lady driver in mind when planning this car, they are to be commended for evolving one in which her comfort is provided for and all undesirable features have been removed."

### THE CAR.

"The car of to-day. The prospective purchaser of an Angus-Sanderson car will have in this car the benefit of many expert brains."

### THE MOTOR TRADER.

"The outstanding features of the design are ease of access and attention to all details from the standpoint of the owner-driver."

### DAILY MAIL OVERSEAS EDITION.

"A car in which convention has been forgotten, but which does not embody a single feature that can be criticised on the ground that it is untried and unknown."

### THE GARAGE.

"My joy knew no bounds when I found that here, at least, we are to have a really accessible car. It will be possible to strip the chassis without removing the body or using the pit."

### THE DAILY EXPRESS.

"The new Angus-Sanderson car has created something of a sensation in the motor world."

### IRISH LIFE.

"The Angus-Sanderson car would compel attention however and wherever it were made, because it is so essentially an owner-driver car."

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