

The 350 c.c. E.W.

# Douglas

1927.

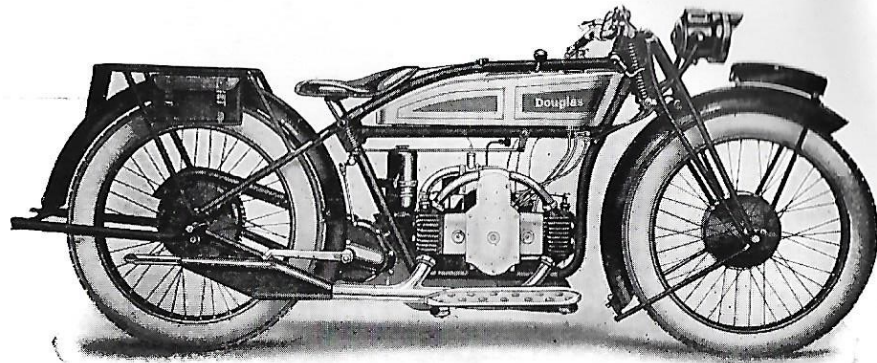
## The 1927 E.W. Model Douglas.

The Model E.W. 350 c.c. DOUGLAS requires no introduction to the motorcyclist—the immediate popularity achieved by this entirely new design of DOUGLAS has established the claim we made at the time of its inception.

The 1927 E.W. has created great surprise by its performance and appearance. The chief features worthy of mention are:—

1. The new mechanical pump which is positive in operation and with sight feed on the tank.
2. Heavier spokes in back wheel.
3. Cast-iron pistons on standard and de luxe models.
4. Aluminium pistons to Sports models.
5. Improved tank construction.

Beyond the points mentioned above, there has been **no** need to alter the method of construction or general design, **in fact**, so near to perfection is the E.W. that such alterations as are made are refinements of auxiliary parts only.



## SUMMARY OF IMPORTANT FEATURES

1. Low riding position, permitting a natural sitting posture and reducing risks of skidding to a minimum.
2. 3-in. medium pressure Balloon Tyres fitted as standard and giving remarkable comfort even when riding over atrocious road surfaces.
3. Vibrationless, twin-opposed engine and shock absorbed transmission, giving silky smoothness in running unequalled by any other type of engine.
4. Wheel Hubs are entirely proof against water, mud or dust and fitted with taper roller bearings.
5. Front forks of exceptional design, lubricated by pressure grease gun which automatically lubricates head bearings.
6. Head bearings, combined radial and thrust; water, mud and dust proof.
7. Frame, having low centre of gravity, situated at a point below a line drawn through the wheel spindles.
8. Petrol tank holds over 2 gallons of petrol and 3 pints of oil.
9. Gear change is through the tank.
10. Large mudguards protect rider and machine.
11. Low pressure brakes of positive action.
12. Instantaneous, tool-less clutch, and brake adjustment.
13. Clean arrangement of control wires.
14. Constant mesh gear box.
15. Roller bearing mainshaft to gearbox.
16. Totally enclosed kickstarter.
17. Totally enclosed valves, interchangeable and directly operated from cam.
18. Roller bearing crankshaft.
19. Renewable roller races for connecting rods and crank-pins.
20. Large floating Gudgeon pins.

21. Mechanical lubrication.
22. Induction pipe arranged with heating jacket and hot air pipe.
23. Quickly detachable magneto.
24. Engine arranged for easy decarbonising.
25. Chain guard for primary chain and suitable guard for back chain.
26. Improved footplates and undershield.

## Specification.

### ENGINE

Bore 60.8 m.m. Stroke 60 m.m. Capacity 349 c.c.

The E.W. engine during the past season has proved itself to be one of the finest examples of modern internal combustion engineering existing in motor cycle construction to-day. The unfailing reliability, quietness of operation and vibrationless running, together with the wonderful reserve of power and speed, has undoubtedly won the hearts of all motor cyclists.

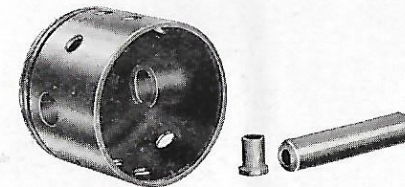
A few improvements have been added to meet the demands of a critical market, and all standard machines are now fitted with cast-iron pistons, and full floating gudgeon pins. The lubrication system has also received attention, and a positive plunger pump working in conjunction with the sight feed on the tank, provides a foolproof system.

The complete engine specification is as follows:—

The crankshaft is of the built-up type, and the crank pins are provided with detachable hardened races, heavy duty ball races providing a rigid mounting on the crankcase.

Connecting rods of H section alloy steel are fitted with separate hardened big-end races, and the little ends with phosphor bronze gudgeon pin bushes.

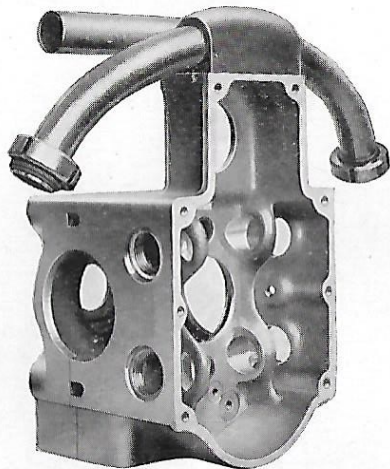
All connecting rod and crankshaft bearings are interchangeable, and easily renewable when required.



Piston.

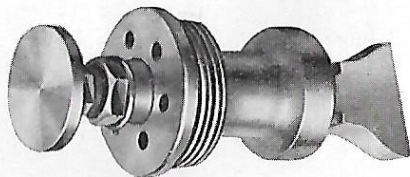
The pistons are in close grain cast-iron of a tensile strength of 18 tons per square inch. Two piston rings are carried on the upper end of the piston, one acting as a scraper ring. Gudgeon pins of the full floating type, greatly facilitate the removal of the pistons for cleaning and provide long life, owing to the increase of bearing surface.

Aluminium pistons of similar design are fitted to all Sports models.

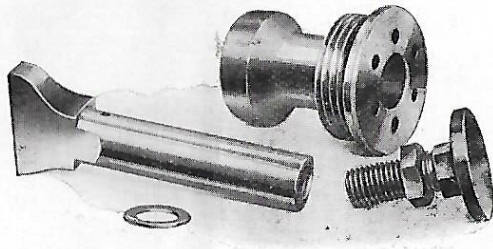


The extremely neat crankcase casting.

The crankcase is of box section and cast in aluminium; the case is of smooth exterior, which prevents the adhesion of dirt and allows of easy cleaning.



Complete tappet.

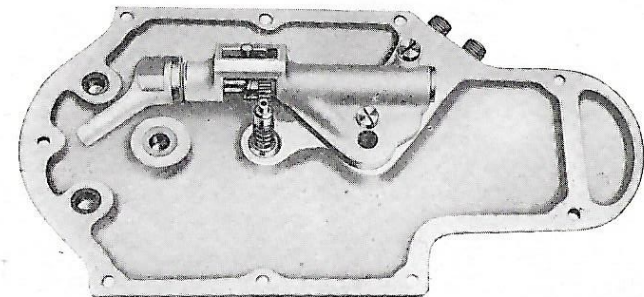


Tappet parts.

The cylinders have been carefully studied and are cast in a special iron mixture, and are provided with deep and efficient cooling fins. Both inlet and exhaust ports are machined throughout and care is taken to ensure that all compression pressures are identical.

The timing gear is of robust construction, and arranged to give quick opening and closing of the valves, while the magneto is quickly detachable.

Die cast aluminium cover plates are fitted to the cylinders to form a complete closure of the valve stems, tappets, etc., and thus protect these parts from the abrasion due to mud, dirt, dust, etc.

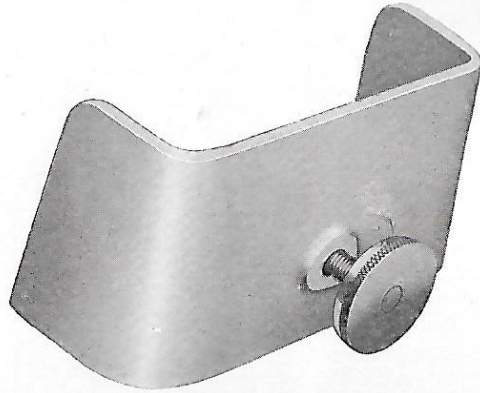


Showing the position of oil pump in timing chest cover.

The timing chest cover carries the double plunger lubricating pump which is driven by a worm wheel attached to the crankshaft. The pump is comprised of a plunger carried in suitable aluminium casting, in which is formed the necessary ducts and ports. The operation of the pump can be clearly seen from the photograph. The small cam pinion which meshes with the crankshaft worm wheel causes the plunger to rise and fall positively in direct relation to the engine revolutions. The oil passes through a filter situated in the oil tank direct to the pump by gravity. After passing through the pump it is forced to the sight feed on the tank under control of the needle valve and conducted to the front cylinder through a suitable non-return valve.

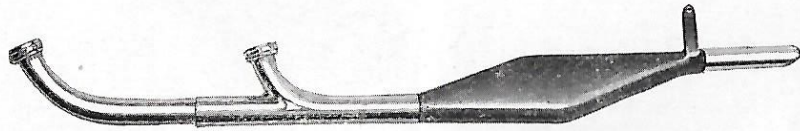
The lubrication of the timing gear is through the hollow cam spindles, the excess oil dropping to the bottom of the timing chest, where it is picked up by a suitable nozzle extending from the plunger pump, and forced through the crankshaft, through suitable drilled passages, which provide an even distribution to the big end bearings.

A stand-by hand pump situated in a convenient position on the tank, can be used as an emergency or to supplement the mechanical system when required, all the oil passing through the sight feed.

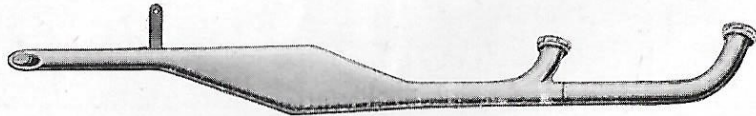


Aluminium cover plate for valves and springs.

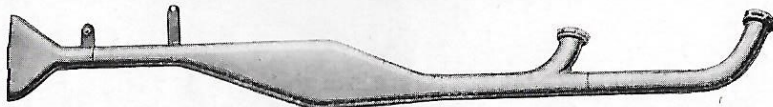
Carburation is by two jet carburetter, a cast on aluminium muff drawing heat from the crankcase, preventing freezing at the point where the branch joins the main induction pipe. A suitable hot air pipe is fitted to the air inlet of the carburetter, the other end of which is in close contact with the head of the rear cylinder.



Silencer for Standard Model.



Silencer for Sports Model.



Silencer for De-Luxe Model.

The silencer is of pleasing design, the capacity being five times the swept volume of one cylinder. The exhaust manifold leading into the silencer is baffled at the end, the gases leaving by a series of slits out on the top of the pipe. A tail pipe of approximately half the area of the exhaust pipe conducts the gases from the container to the atmosphere.

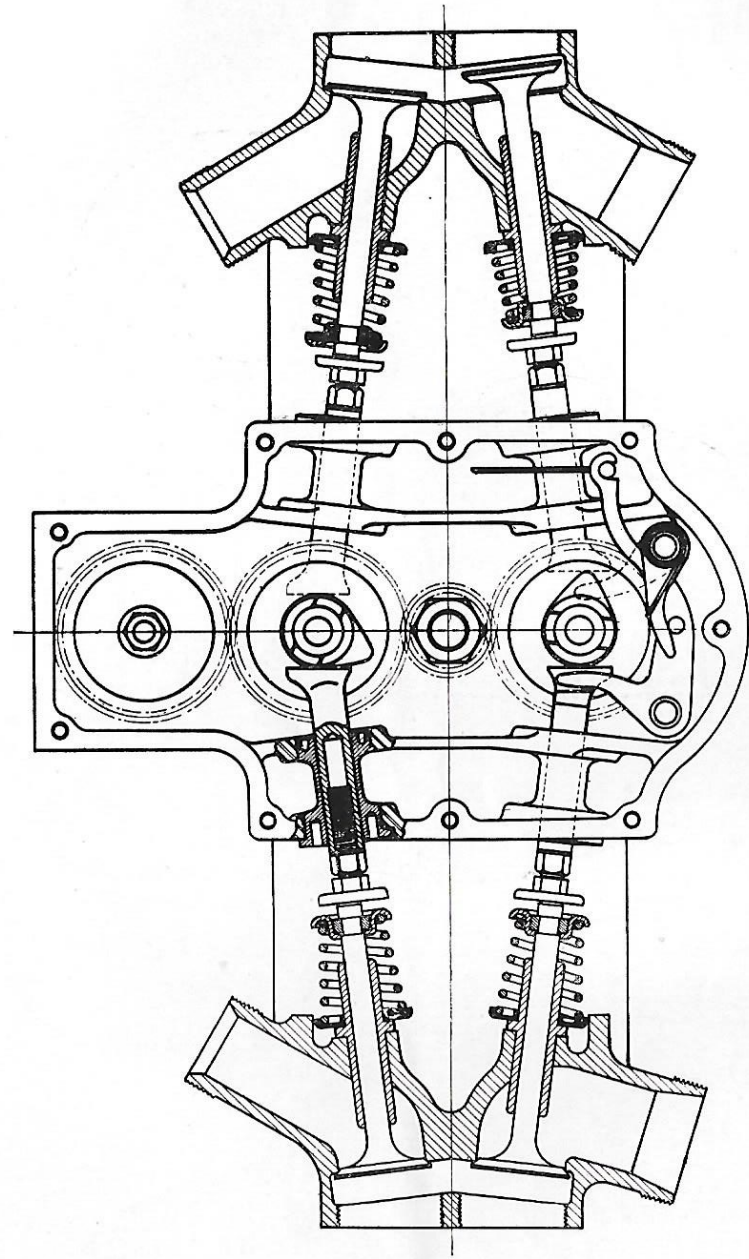
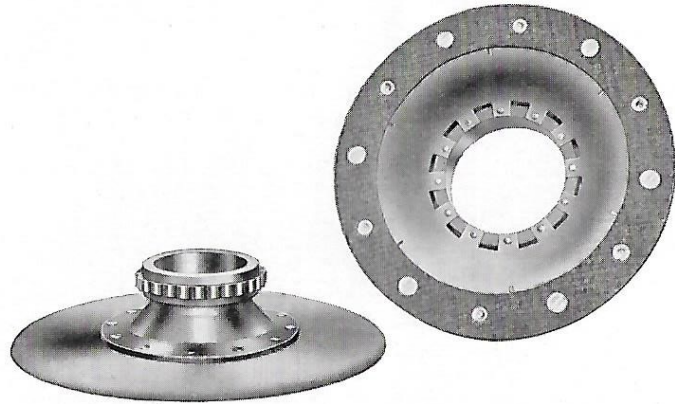


Diagram showing operation of Cam.

## CLUTCH

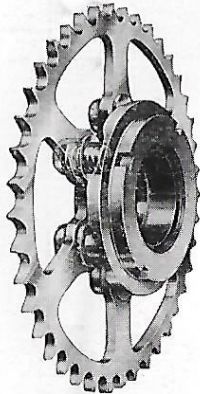
The successful type of Douglas fly-wheel clutch has been retained, but it has been modified and fitted with a number of improvements, including roller bearings carrying the driving plate in lieu of ball, and a separate ball thrust is provided to take care of the clutch thrust. Foot clutch can be fitted at an extra cost of 30/-.



Clutch plate showing roller bearing and ball thrust.

## TRANSMISSION

The transmission is by chain throughout  $\frac{1}{2} \times \frac{3}{16}$  in. chain being used from the engine to the gear box, through the medium of the DOUGLAS patent shock absorber which absolutely eliminates all engine shocks; then by a chain of a similar size from the gear box to the rear wheel.



Transmission shock absorber.

Primary chain adjustment has been made simple by a draw bolt fitted on the gear box and chain adjusters situated in rear slotted

fork ends, provided adjustment by sliding the back wheel and gear box in the desired direction.

The front chain is amply protected by means of a substantial guard, securely fixed, yet easily detachable when required. A suitable guard is fitted over the rear chain which is sufficient to protect the dress of lady riders. This guard passes partially round the back sprocket, and forms sufficient protection against mud and water from the back wheel and mudguard.

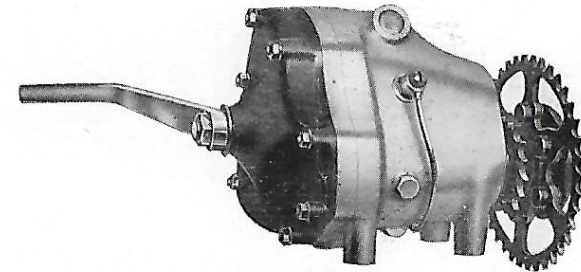
Lubrication of both chains is by a pressure pipe leading from the crankcase of the engine.

The chain itself is of entirely new design and cannot stiffen up under any condition of usage.

## GEAR BOX

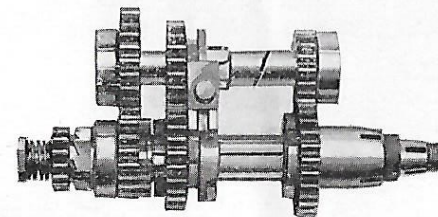
An entirely new type of gear box has been evolved of the constant mesh type, employing short stiff shafts and robust gear pinions.

Substantial dogs are provided for all gears, the second gear dog being made solid with the layshaft.



The main sleeve pinion is carried on large diameter roller bearings, and the sleeve pinion bush is of phosphor bronze.

Whenever necessary felt washers are fitted, thus making the box oil-tight.

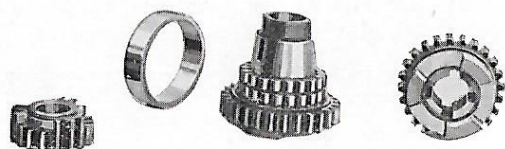


A nipple for pressure grease gun lubrication is screwed into a filler cap of large dimensions thus providing two methods of filling.

A level plug, to ensure the correct oil level is also included, to obviate over-filling the gear box.

An extension at the right-hand side of the box carries the enclosed kickstarter mechanism, the gearing of which turns the engine over at least two compressions when operated to its full limit or travel.

The gear changing operation is by means of a convenient lever carried through the tank, the gate for the selection of the gears being mounted on the top of the petrol tank.



Main sleeve pinion and roller bearing.

It is impossible to miss the selection of any individual gear as apart from the location of the lever in the gate a further lock is provided in the box itself.

An easy method of gear adjustment has been arranged on the top horizontal rod so that the gears can be definitely set in a matter of a few seconds.

Gear Control :—

Forward position—Low Gear.  
Middle position—Second Gear.  
Back position—Top Gear.

The standard gear ratios are as follows :—

1st	..	..	15.12-1
2nd	..	..	8.9 -1
Top	..	..	6.25-1

For exceptionally hilly country special low reduction gears of 17-1 can be obtained from the Spares Department. Sidecar gears can also be supplied with top gears of 7.26-1 approx.

## WHEELS

The wheels are built to accommodate 25×3-in. medium pressure Balloon Tyres which proved so eminently satisfactory since 1925, they are the ideal compromise between the high and low-pressure

pattern. Before adapting these tyres they were subjected to severe tests which have yielded satisfactory results. The rims are so designed as to also take the following sizes of tyres :—

24×2¼ in.

24×2½ in.

Special heavy wheels built up with 650×65 rims to take 650×65, 26×3 or 700×80 tyres supplied at an extra cost of 30/-. These rims will also take 710×85, or 27.2×3¾ tyres.

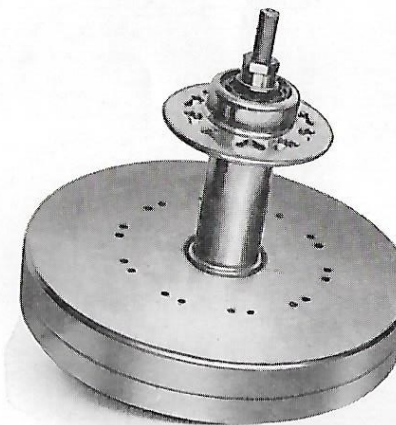
The heavy steel rims have 40 spokes tangentially arranged on a new design of hub. The hub body carries two heavy duty taper roller bearings on a 60-ton steel spindle, having a left-hand thread at both ends to obviate any possibility of the bearings tightening up under running conditions and allow of easy adjustment.

A system of cups and felt washers render the bearing races impervious to the effects of mud, water, etc.

Lubrication is quickly effected by pressure grease gun.

## BRAKES

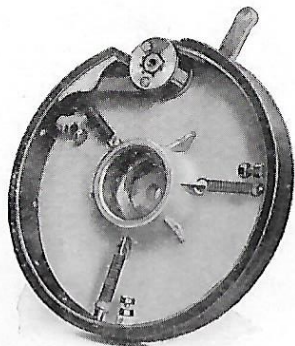
The DOUGLAS low pressure braking system undoubtedly supersedes any hitherto supplied by any Manufacturer. This new and patented design combines a controllable self-acting principle requiring exceptionally low, hand or foot pressure. All brake band parts, front and back are interchangeable. The braking is effected by an expanding steel band which brings into operation over 25 sq. ins. of frictional material by its own self acting construction.



Complete hub and brake drum

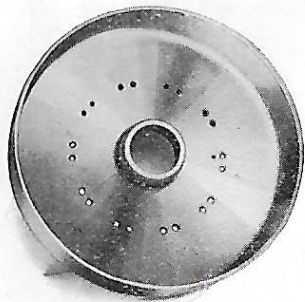
The brake bands are securely held by means of three tension springs to the anchorage plate, thus avoiding any rattle of the internal mechanism. The brake operation is so arranged that without any internal adjustment the whole frictional lining can be used up to its safety margin before relining becomes necessary.

A most important point in the design is that the whole of the braking strains are taken by the frame tubes, or in the case of the front brake by the fork blades, and not through the brake anchor plate. No torque arms are necessary, and the adjustable operating spindle can be set to the most advantageous position in a few seconds.



Simple brake mechanism.

In order to permit of quick removal of the wheels the following procedure only is necessary. Slacken the spindle nuts, slacken brake operating spindle retaining screw, remove operating spindle, and the wheel complete with brake drum, etc., can be removed. This procedure applies to both front and rear wheels. A further improvement over other brake designs and a very important one is the tool-less adjustment of both front and rear brakes. The back brake is operated by a convenient pedal, and the front by a springloaded plunger, and a length of steel rod connected by a short length of flexible cable to the handle-bars.



Brake drum cover.

The foot brake pedal is so situated as to require no alteration of position when footrests are fitted in place of footplates. Special supports for footrests can be obtained from our Spares Department, but are a standard fitment on Sports Models.

This system of braking and adjustment has been the cause of considerable comment in the press, and riders are unanimous in their praise for the smooth yet positive action.

## FRAME

The frame is composed of weldless steel tubes doubled where necessary to give maximum strength and rigidity with minimum weight. The back section is easily detachable.

Weight distribution has received careful attention which, together with a special combination of rake and trail of the front fork, gives wonderful steering properties, it being possible to ride "hands off" at almost any speed.

The ground clearance of the original DOUGLAS Models has been maintained.

The design of the frame permits the centre of gravity of the machine to be remarkably low, this is a feature unique in DOUGLAS Models, practically eliminating all possibility of skidding.

Footrest and footplate support tubes are quickly detachable, and in the event of being damaged they can be removed and repaired without the necessity of unbrazing any part of the frame.

Another point of importance is the provision for fitting 26×3 in. or 710×85 tyres.

Before enamelling, the frame is passed through an anti-rust process after which it is stove enamelled, thus giving the machine a very high finish, with a hard, durable surface.

On the Standard and De Luxe Models serrated pillion footrest lugs are brazed rigidly to the back fork stays.

DOUGLAS pillion footrests can be obtained from the Spares Department.

## FRONT FORKS

The successful pattern of DOUGLAS Fork has been retained, but such improvements have been made that will give added durability.

The steering column ball races are enclosed in steel cups, which together with felt washers protect the races from injury due to the admission of foreign matter such as water, dust, etc. These races are lubricated from the fork shackle pin greasers by pressure grease gun.

The front wheel is firmly secured in the fork blades by means of steel washers inserted in counter-bored lugs.

## HANDLEBARS

Heavy seamless steel tubes, securely brazed into a steel lug bent to a convenient shape has been found in conjunction with the adjustable saddle, to give a most comfortable riding position for both short and tall riders.

## CONTROLS

The controls are conveniently situated on the handlebars as follows:—

- Right-hand, inverted lever—front brake.
- Left-hand, inverted lever—valve lifter.
- Left-hand, clutch lever—adjustable for position.
- Left-hand, stud fixing—ignition lever.
- Right-hand, stud fixing—throttle and air levers.

Special DOUGLAS twist-grip control as fitted to all Sports models can be supplied at extra each. This control will fit all Douglas models (see separate leaflet).

Upturned bars can be supplied in place of flat bars without extra cost if specified at the time of ordering.

## SADDLE

A pan type saddle mounted upon special DOUGLAS combined flat and coil springing gives immunity from all road shocks and provides great comfort.

## FUEL TANK

A heavy plate tank has been designed in keeping with the general lines of the machine, and is mounted into the frame upon steel clips and rubber cushions. The front of the tank has been formed into a bulk-head which will accommodate 3 pints of oil, whilst a new type of spring filler cap of large diameter is fitted for the purpose of filling with oil in a quick clean manner. A really serviceable oil filter is fitted to the bottom of the tank.

A petrol filter cap of similar construction as fitted to the oil tank is arranged for easy access and rapid filling. The filler caps are attached to the tank by means of small internal chains, making it impossible for them to be dropped or lost in the dark.

The petrol capacity is over 2 gallons, a distinct advantage when touring.

A combined petrol tap filter and drain plug is fitted whilst a further advantage is the removal of the petrol filter which can be made without the necessity of disturbing the tap or petrol pipe.

A slot is arranged through the centre of the tank for the accommodation of gear lever and gate, the latter being screwed to the top of the tank for the selection of the various gears.

The method of arranging the gear change tends towards cleanliness and adds considerably to the general appearance, it does not detract from the smart lines of the tank neither does it interfere with the leg position of the rider.

The tank is so mounted in the frame as to leave ample clearance between the top rail, thus allowing a duster to be passed through for the purpose of cleaning.

## FOOTPLATES

Cast aluminium footplates, fitted with a new type of flat rubber stud give extreme comfort under all conditions.

## MUDGUARDS

Large metal mudguards are fitted, having a reinforcing strip inside.

## UNDERSHIELD

A steel undershield ribbed to provide rigidity and strength forms a partial closure to the underside of the machine.

## CARRIER

A seamless steel tube carrier of ample strength is rigidly secured to the machine by lugs provided on the frame, this arrangement does not import any strain upon the mudguards.

Two metal and leather tool bags are provided, being firmly attached to the carrier by lugs which are welded thereon. Special attachments are made to carry the rear number plate.

## STANDS

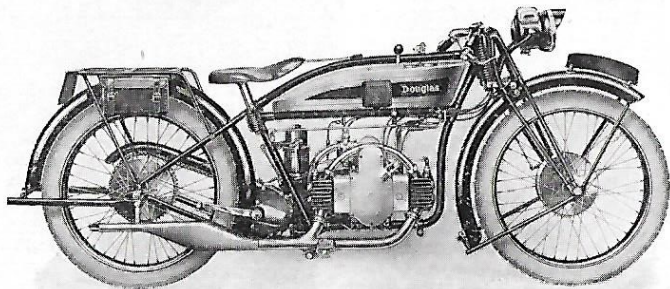
Seamless steel tubes are also used for the two stands which are fitted to the front and rear forks.



**The three E.W. models for Season 1927 are as under:—**

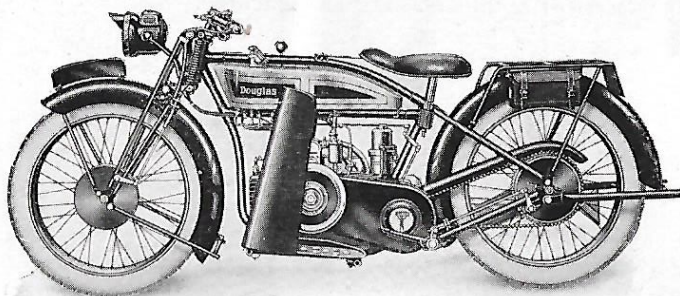
**THE STANDARD MODEL**—possessing the usual E.W. Douglas features. The engine is fitted with cast-iron pistons, two-jet carburettor, etc., dual mechanical lubrication system. Undershield and footboards are included. Tax 30/-.

**Price £42 : 10 : 0**



**THE SPORTS MODEL**—fitted with aluminium pistons, specially tuned engines and carefully road tested, to be capable of about 65 m.p.h. Dual mechanical lubrication system. Sports pattern handlebars, special steering head damper, Douglas pattern adjustable knee-grips, sports footrests and twist-grip control to throttle, plated silencer, patent serrated footrest lugs, firmly brazed to rear fork stays. Tax 30/-.

**Price £45 : 10 : 0**



**DE LUXE MODEL**—Engine fitted with cast-iron pistons, two-jet carburettor, dual mechanical lubrication system. Plated silencer and fish tail. Extra large valanced mudguards, spring top saddle, large metal leg shields, and new pattern undershield; patent serrated footrest lugs, firmly brazed to rear fork stays. This machine exceeds the 200lbs. weight limit, but provides an ideal, all-weather mount and great comfort.

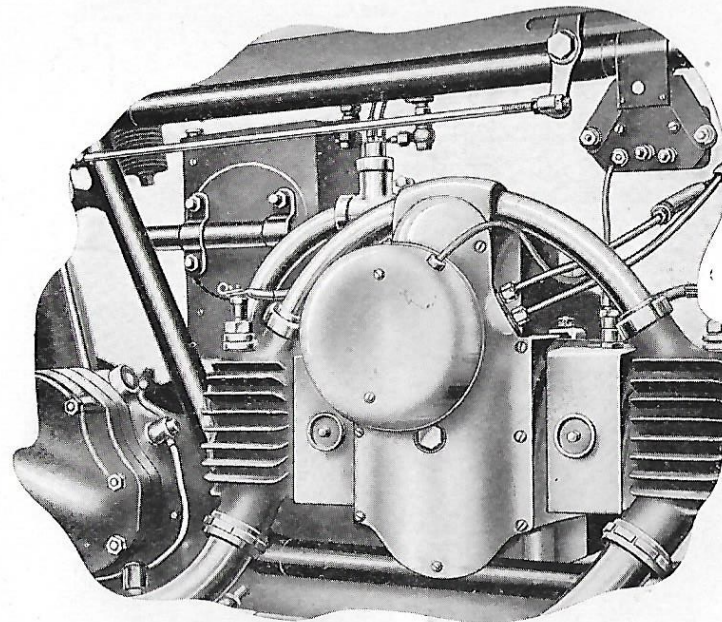
**Price £46 . 10 : 0**

Lamp, Generator and Horn, 30/- extra in each case.

## The Douglas Electric Lighting Set.

### ELECTRIC LIGHTING.

There is no doubt that electric lighting on motorcycles has come to stay. The beautifully clean white light, given by head lamp reflectors, working under ideal conditions, and not exposed to injurious atmospheric conditions, and ease and cleanliness of handling, fulfil the most exacting requirements of the idealist.



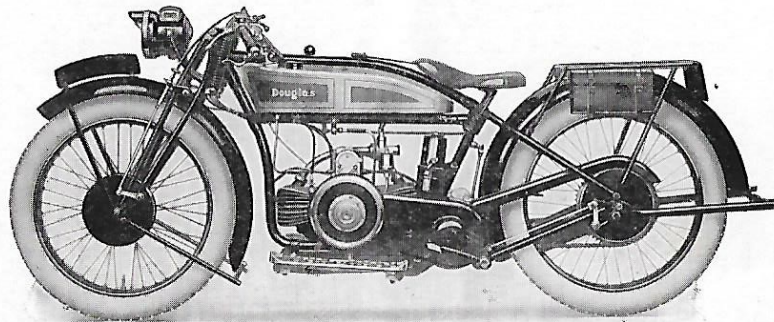
DOUGLAS MOTORS have realised after conclusive tests and experiments, that the most satisfactory outfit is undoubtedly that in which a separate generator, gear driven from the engine, supplies the electrical energy. The system now put forward, comprises an entirely new generator, made specially for the DOUGLAS COMPANY and embodies many very unique features.

The generator is carried in a specially-constructed housing, cast solid with the timing chest cover plate, and is neat and of exceptionally pleasing appearance. A special arrangement of insulating abutments protect the generator from any undue rise of temperature from conducted heat, and a felt washer carried around the extension of the driving pinion, working on a conical seating in the cover plate, definitely precludes the egress of oil from out of the timing chest and from entering the generator armature tunnel.

The gear is so arranged that no additional idler pinion is required, only a small pillion which is rigidly keyed and fixed on the armature shaft, and meshes with the magneto driving wheel. The gear ratios are so arranged that the generator runs at approximately one and a third times the engine speed, and gives an output of 22 watts at approximately 20 m.p.h. Provision is made for easy adjustment of the mesh of the pinions, the armature cover being arranged eccentrically to the driving shaft, and by rotating the main generator through a few degrees any reasonable alteration of mesh can be obtained.

The generator is secured to the timing case cover by means of two set screws, and the whole can be removed from the engine in less than 10 seconds.

A light aluminium cover plate can be substituted for the generator, and should the lighting system fail at any time, there is no need to put the machine out of commission.



Suitable cut-out is carried in a protected position underneath the tank, and is set to cut in at 10-12 m.p.h.

The head lamp is carried on the usual DOUGLAS pattern brackets, and fitted with a switch at the rear, having the following positions:— Off, charge, full and dim, and all cables are carefully protected and clipped to prevent short circuiting due to vibration, water, etc.

All existing E.W. machines can be fitted with the splendid lighting plant and it is hoped in the near future to provide a means of adopting it to all other existing Douglas models.

**Price £7 : 10 : 0 Solo    £8 : 0 : 0 Combination**

# Douglas

MOTORS LTD.

## Purchase out of Income Scheme.

	Cash Price	Deposit	Insurance	Monthly Inst.	Total
<b>E.W.</b> 350 c.c. Standard	£42 10 0	£10 12 6	£3 15 0	£2 17 5	£45 1 0
<b>E.W.</b> 350 c.c. Sports	£45 10 0	£11 7 6	£3 15 0	£3 1 6	£48 4 7
<b>E.W.</b> 350 c.c. De Luxe	£46 10 0	£11 12 6	£3 15 0	£3 2 10	£49 5 10
Sidecar	£14 0 0	£3 10 0	extra	£0 18 11	£14 16 10

### DELIVERY.

If all arrangements are satisfactory your Machine will be delivered within ten days, or as production allows.

### GUARANTEE.—*See over.*

All Machines delivered under this Scheme are guaranteed as per the terms of the Catalogue in precisely the same manner as a cash transaction.

### INSURANCE.

Every Machine must be insured in the joint names of Douglas Motors Ltd. and the Hirer, through Douglas Motors Ltd.

# GUARANTEE

*A Reproduction is supplied in the license of each motorcycle.*

We give the following guarantee with our motorcycles instead of the guarantee implied by statute, or otherwise, as to the quality or fitness of such machines for the purpose of motorcycling: any such implied guarantee being in all cases excluded. In the case of machines which have been used for "hiring out" purposes or from which our Trade Mark or manufacturing number has been removed, no guarantee of any kind is given, or is to be implied.

WE GUARANTEE, subject to the conditions mentioned below, that all precautions which are usual and reasonable have been taken by us to secure excellence of material and workmanship; but this guarantee is to extend and be in force for three months only from the date of purchase, and damages for which we make ourselves responsible under this guarantee are limited to the replacement of any part which may have proved defective.

WE UNDERTAKE, subject to the conditions mentioned below, to make good at any time within three months any defects in these respects. As motorcycles are easily liable to derangement by neglect, or misuse, this guarantee does not apply to defects caused by wear and tear, misuse or neglect.

The term "misuse" shall include, amongst others, the following acts:—

- I. The attaching of a sidecar to the motorcycle in such a manner as to cause damage, or calculated to render the latter unsafe when ridden
- II. The use of a motorcycle, or of a motorcycle and sidecar combined, when carrying more persons, or a greater weight, than that for which the machine was designed by the manufacturers

Any motorcycle sent to us to be plated, enamelled or repaired, whether the repairs are required for the purpose of making good the defect before referred to or otherwise, will be repaired upon the following conditions, *i.e.*, we guarantee that all precautions which are usual and reasonable have been taken by us to secure excellence of material and workmanship, such guarantee to extend and be in force for three months only from the time such work shall have been executed, and this guarantee is in lieu and in exclusion of any common law or statute warranty, and the damages recoverable are limited to the cost of any further work which may be necessary to amend and make good the work found to be defective.

**Conditions of Guarantee.** If a defective part should be found in our motorcycle or in any part replaced it must be sent to us, carriage paid, and accompanied by an intimation from the sender that he desires to have it repaired free of charge under our guarantee, and he must also furnish us at the same time with the number of the machine, the name of the agent from whom he purchased, and the date of the purchase, or the date when the alleged defective part was replaced, as the case may be.

Failing compliance with the above, no notice will be taken of anything which may arrive, but such articles will lie here at the risk of the senders and this guarantee, and any implied guarantee, shall not be enforceable.

We guarantee only those machines which are bought either direct from us or from one of our duly authorised agents, and under no other conditions.

We do not guarantee the specialities of other firms, such as tyres, saddles, chains, lamps, etc., or of any component part supplied to the order of the purchaser differing from our standard specification, supplied with our motorcycles or otherwise.

**The Term "Agent"** is used in a complimentary sense only, and those firms whom we style our agents are not authorised to advertise, incur any debt, or transact any business whatsoever on our account, other than the sale of goods which they may purchase from us; nor are they authorised to give any warranty or make any representation on our behalf other than those contained in the above guarantee.

**Conditions of Sale.** All Douglas motorcycles are sold under the guarantee and conditions mentioned on this page, and the specialities of other firms, such as tyres, belts, electrical fittings, etc., are outside our warranty.

*Douglas Motors reserve the right to alter this specification without notice.*

## DOUGLAS MOTORS LTD.

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