

Close-up view of the new Talisman Twin. The two exhaust pipes lead into a common pipe and silencer

Excelsior Twin Two-Stroke

**Five-bearing Mainshaft : Parallel Vertical Cylinders :
Capacity 244 c.c. : New Plunger-type Rear Suspension**

A TWIN two-stroke of 244 c.c. (50 x 62 mm. bore and stroke) is announced by Excelsiors. Two entirely separate cylinder barrels and heads are used; each piston has its own crankcase beneath, and the crank throws are at 180 degrees to each other. Lubrication is on the petrol system. The mainshaft has five bearings.

Bolted to the rear of the crankcase, the gear box forms a unit with the engine. Name of the new model is the Talisman Twin, and its frame is similar to that of the 197 c.c. Roadmaster. The Excelsior telescopic fork is used for front suspension, and there is new, plunger-type springing at the rear.

Mounted vertically in the frame, the Talisman's engine is secured by two pairs of engine plates—one pair at the front and the other at the rear. Ball bearings support the crankshaft, and its offside end drives the Wico-Pacy magnet generator, of which the main housing is secured to the crankcase by two bolts. Alternate steel and bronze rollers are employed for big-end bearings, and the con-rods are made of nickel-chrome steel. A phosphor-bronze bush is used in each small-end, and the fully-floating gudgeon pin is located by circlips. Each aluminium-alloy piston is flat-topped and carries two rings.

Paper washers are used between the cast-iron cylinder barrels and the crankcase, and the barrels are spigoted to a depth of $\frac{1}{8}$ in. Fore-and-aft slots near the base of each barrel provide clearance for the con-rods. The transfer ports in the sides of the cylinders are so shaped that they encourage the gases to swirl to the rear of the combustion chambers, where the plugs are situated. Each cylinder has an induction port at the rear and an exhaust port in front. The induction ports are connected by an aluminium-alloy manifold, on to which is bolted a single Amal carburettor. This manifold is designed to give a downswept effect to the incoming gases.

Aluminium-alloy cylinder heads are used, with pear-shape combustion chambers, the wider ends of which face towards the front.

There is a metal-to-metal contact for the heads and barrels, and each head is held to its barrel by four bolts. The same number of holding-down bolts secures each barrel to the crankcase.

Primary drive is by means of an endless, $\frac{1}{2} \times \frac{1}{8}$ in. chain, running in an oil-bath. Gear ratios of the positive-stop, foot-operated box are 16.1, 9.9, 7.42 and 5.5 to 1. A two-plate cork-insert clutch, operating in oil, is used.

Finned flange nuts, each with a three-bolt fixing, secure the exhaust pipes to the ports, and each nut incorporates a copper-asbestos gasket. The two pipes lead into one silencer on the left-hand side of the machine.

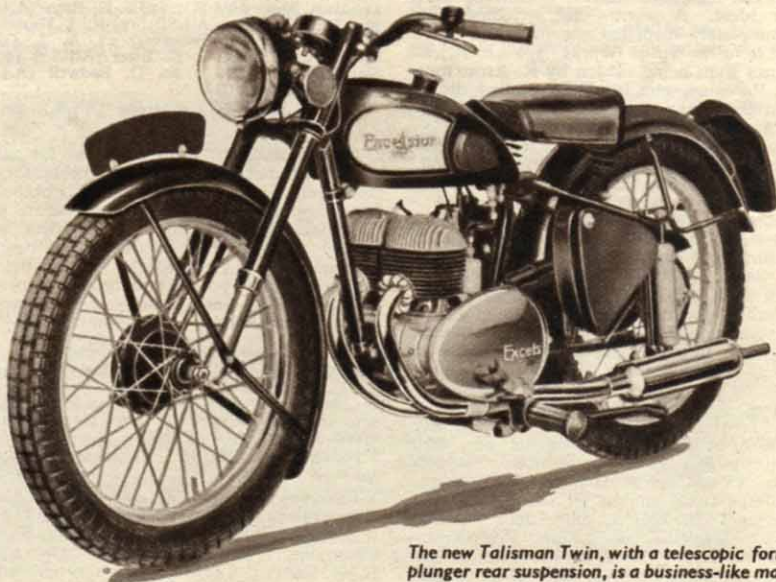
Total movement of the new plunger-type rear suspension is 1½ in. Each unit or leg is built up as follows: A steel rod is bolted vertically between lugs brazed to the frame. On this rod are two tubes between which, and also on the rod, is a spacer. Above the spacer is a short rebound coil-spring, and below the spacer is a longer, compression, double-coil spring. The springs are contained in a steel housing which has two light-alloy die-cast end-caps. Two phosphor-bronze bushes, one at the top and one at the bottom, are positioned in the end caps and serve as bearings for the housing, which carries the wheel spindle, to slide up and down. Removal of a chain-adjuster allows the spring unit to be swivelled round for easy wheel detachment. Springs of different rates to suit individual riders can easily be fitted. The housing is filled with grease, and there are suitable sealing glands. A rubber buffer on the top and bottom of the assembly cushions any excessive movement.

In conjunction with the rear-springing, a ½ in. wheel spindle is used; journal ball bearings carry the hub. A hub-driven speedometer is fitted.

Capacity of the Talisman's petrol tank is 2½ gallons. Tyres are Dunlops, size 3.00 x 19 in. Brake sizes are 5 in. front and 6 in. rear. Finish is maroon enamel with cream tank panels. A 36-watt rectifier lighting set, with battery and electric horn, are fitted as standard. Weight of the machine is about 220 lb.

Other models in the Excelsior range for 1950 are the two 98 c.c. autocycles, and the 122 c.c. Universal and 197 c.c. Roadmaster motor cycles. Rear brakes on the motor cycles have increased leverage. Otherwise, all these models are being continued as before except for certain modifications to which effect will be given after December 1st, 1949. The Universal and Roadmaster can be supplied with rectifier, battery and electric horn at extra cost.

A single-speed model, the de Luxe Autobyk has an excelsior Spryt two-stroke engine of 98 c.c. (bore and stroke 50 x 50 mm.). Ignition is by flywheel magneto, which incorporates coils for direct lighting. Capacity of the petrol tank is 11 pints. Specification includes an Amal carburettor, Dunlop tyres size 2.00 x 26 in., and 4 in. brakes. After December 1st, the machine will have chromium plated handlebars, a larger (6 in.) headlamp, and a Wico-Pacy flywheel magneto with coils for a 21-watt direct lighting set.



The new Talisman Twin, with a telescopic fork and plunger rear suspension, is a business-like machine

Having a two-speed gear, the 98 c.c. Super Autobyk is fitted with the Excelsior Goblin two-stroke power-unit, bore and stroke 50 x 50 mm. Ignition, again, is by flywheel magneto, which also supplies direct lighting. Tank capacity is 11 pints, and specification includes Dunlop tyres, size 2.25 x 21in. After December 1st, the model will have chromium plated handlebars and silencer, the larger head lamp, and the Wico-Pacy flywheel magneto with the 21-watt lighting set.

Both the autocycles have a rubber-sprung, parallel-ruler action front fork of which the two members are tubular section.

Of 122 c.c. (bore and stroke 50 x 62 mm.) the Universal motor cycle has a Villiers two-stroke Mark 10D engine-gear unit with a three-speed, foot-operated box. Ignition is by Villiers flywheel magneto, and lighting is direct. Tank capacity is 2½ gallons, and equipment includes Dunlop tyres, size 2.75 x 19in. Brakes are 4in. front and rear. The Excelsior telescopic front fork is fitted as standard. After December 1st,

this model will be fitted with the new rear suspension and will also have a triangular tool-box fixed to the rear stays.

Bore and stroke of the 197 c.c. Villiers-engined Roadmaster are 59 x 72 mm. The power-unit is the Villiers Mark 6E two-stroke engine-gear unit, which has a three-speed, foot-operated box. Ignition and lighting arrangements are similar to those on the Universal. The Excelsior telescopic front fork is standard, and, after December 1st, the model will have the new rear-springing, as well as the triangular tool-box fitted to the rear stays. Dunlop tyres are used, size 3.00 x 19in., and the brakes are 5in. front and rear. Tank capacity is 2½ gallons. Both the Universal and Roadmaster have a three-point engine mounting.

Finish on the autocycles is black and cream, and on the 122 c.c. and 197 c.c. motor cycles maroon and cream. A chromium finish is given to plated parts. Excelsiors are also continuing to market their well-known Speedway machine.

Makers are the Excelsior Motor Co., Ltd., Kings Road, Tyseley, Birmingham, 11. Prices are as follows, with Purchase Tax applicable only in Great Britain:—

	Basic Price	Total Price
	£ s. d.	£ s. d.
50/S1, 98 c.c. De Luxe Autobyk	45 0 0	57 3 0
50/G2, 98 c.c. Super Autobyk	55 0 0	69 17 0
50/U1, 122 c.c. Universal	69 10 0	88 5 4
50/U2, 122 c.c. Universal (with rectifier, battery and electric horn)	74 10 0	94 12 4
50/R1, 197 c.c. Roadmaster	78 0 0	99 1 2
50/R2, 197 c.c. Roadmaster (with rectifier, battery and electric horn)	83 0 0	105 8 2
50/T1, 244 c.c. Talisman Twin	110 0 0	139 14 0
Smith's Speedometer for U1 and 2, and for R1 and 2 extra	3 3 6	4 0 8
Smith's Speedometer for T1 extra	4 0 0	5 1 8

New Norman Lightweight

Range for 1950 Comprises Four Models

A 98 c.c. two-speed motor cycle has been added to the range of Norman machines for the coming year. The range now comprises Model B2 fitted with the 197 c.c. Villiers engine-gear unit, Model B1 with the 122 c.c. unit, Model D, the two-speed machine already mentioned, and Model C, an autocycle fitted with the 98 c.c. Villiers 2F engine.

Apart from the engine-gear units, Models B2 and B1 are similar. The frame is made up of straight tubes brazed into malleable-iron castings, with pressed-steel plates forming a cradle under the engine to link the front down tube lug with the seat tube lug.

Front fork is of telescopic type with a single, long spring in each leg and hydraulic damping. The lower, sliding legs of the fork operate in phosphor-bronze bushes and are controlled during the early part of depression by the springs. A central rod attached to the wheel spindle clamp of each leg actuates a piston above which is the oil reservoir. As the piston rises, oil is forced into a damper unit bridging the main fork legs at the top and communicating with both oil chambers. This damper unit has 8 holes of ¼in diameter in its inner cylinder through which the oil has to pass. This restriction on the passage of the oil gives the required damping, compensates the damping as between one leg and the other, and also provides damping on rebound by the restriction on the oil returning from the main cylinder through the holes in the inner cylinder, and back to the reservoirs.

The method of retaining the front-wheel spindle is especially neat. Over each spindle end is a sleeve nut with a blind end which is

pulled up against the bearing cone; the hexagon is towards the inside and the sleeve is outward. Fitting round the sleeve is the fork-end clamp—a malleable-iron casting provided with Allen socket screws. Incidentally, the clamp is screwed into its fork leg and brazed in position. Fork head lug and steering column lug are steel pressings.

Brakes measure 5in in diameter and the friction linings are ½in wide. The wheels are fitted with 3.00 x 19in Dunlop tyres. Mudguards are wide and of deep section and are supported by tubular stays. The petrol tank has a capacity of 2½ gallons. Petroflex tubing is employed between the tank tap and the carburettor.

Refinements

There are many attractive, detail refinements on these models. For example, there are four footrest positions; the adjustment is positive and achieved by cutaways in the flange of each footrest hanger which mates with a stud on the engine plate. To get the correct rear brake pedal position relative to the footrest adjustment chosen, the pedal is splined to the brake operating shaft. Handlebars are fully adjustable for height and angle by means of clamps. There is a sturdy central stand of the spring-up type. The rear chain guard has a deep valance so that both runs of the chain are concealed for more than half their length. The exhaust pipe has an expansion chamber formed near the cylinder port by an increase in diameter on the curve of the pipe; the silencer is of the cylindrical type, with fishtail and baffles detachable for cleaning.

Frame of the new Model D, fitted with the

Villiers 98 c.c. two-speed engine-gear unit, is constructed on similar principles to the large machines. A minor difference is that on each side of the rear wheel the seat stay and chain stay are formed from a single tube curved at the fork end.

A new telescopic front fork is employed. Extending right to the top of each main tube is a single, coil spring held in place by a synthetic-rubber block. This block fits inside the first few coils of the spring and has a central retaining bolt which, when tightened, expands the rubber between the coils. This method of attachment is also employed in the sliding fork member. Attraction of the rubber retaining blocks is that although the springs are positively held, slight movement is possible to act as a cushion on both depression and recoil.

Each sliding leg is supported in its main tube by two 1½in-long phosphor-bronze bushes. Lower ends of the sliders are trapped and slotted to accommodate the wheel spindle.

Specification details are 4in-diameter brakes, 2.50 x 19in Dunlop tyres, 1½-gallon petrol tank and an over-centre-type central stand. Footrests and rear-brake pedal are adjustable as on the larger models.

The 98 c.c. autocycle is essentially unchanged; it is fitted with the Villiers 98 c.c. Mark 2F engine which is concealed by large aluminium-alloy shields. Features include a parallel-ruler type fork with each blade formed by a single tube, an eccentrically mounted bottom-bracket for pedalling chain adjustment, 2.25 x 21in Dunlop tyres, 4in-diameter brakes and a 1½-gallon petrol tank.

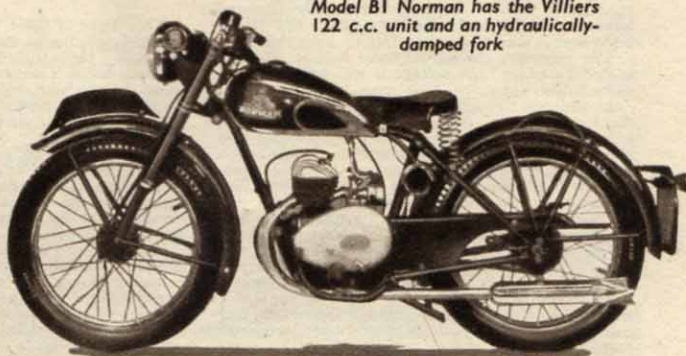
General finish of Norman machines is black enamel with maroon tanks. Chromium plate finish is employed for wheel rims, exhaust system, handlebars and controls. On the Models B2 and B1 a chromium-plated tank with maroon panels is available at extra charge.

Makers are Norman Cycles, Ltd., Beaver Road, Ashford, Kent. Prices will be announced shortly.

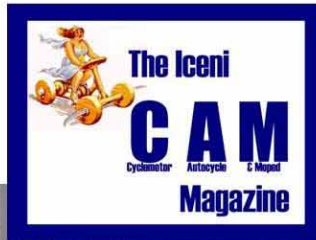
Norman 98 c.c. Autocycle. Engine shields are in aluminium-alloy



Model B1 Norman has the Villiers 122 c.c. unit and an hydraulically-damped fork



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