

Three Excelsiors for 1947

Range Comprises Two Autocycles and a 125 c.c. Machine

FOR 1947 the Excelsior range consists of three two-stroke machines. Two are autocycles with 98 c.c. engines and the third is a 125 c.c. lightweight of particularly sturdy construction. But the rider who wants a fast four-stroke model, and the racing man, have not been forgotten. Within a year it is anticipated that the famous overhead-camshaft Manxman machines will be available, and there are likely to be both 250 c.c. and 350 c.c. classes. The temporary neglect of the Manxman arises from war damage when two-thirds of the factory space was destroyed and many patterns for the larger machines were lost. But there are enough parts available for Excelsior machines to be entered in the 1947 T.T.

New Front Fork

The autocycles are essentially similar except for the engines. A substantial brazed-up frame is used. Between the bottom of the seat tube and the chain stays is a special lug which carries the crank bracket of the pedalling gear; this bracket can be swung in an arc to provide separate adjustment of the pedalling gear chain. The engine unit is anchored at two points below the front down tube where it curves horizontally to meet the seat tube.

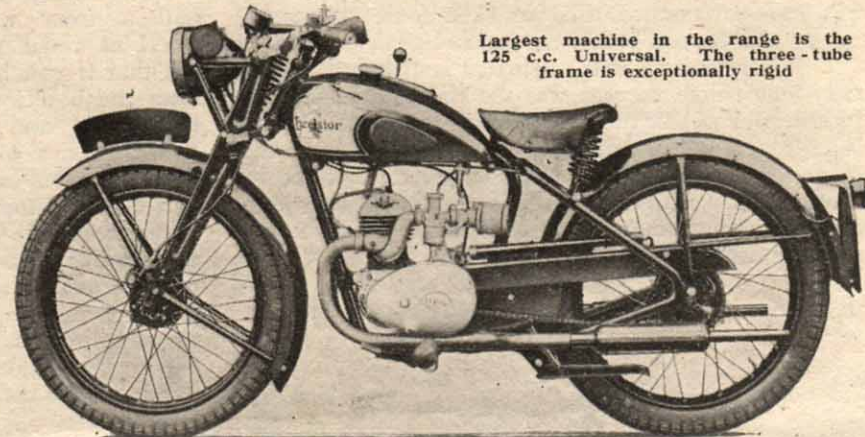
An entirely new front fork with link action and rubber suspension is employed. Each blade is a single taper tube in Reynolds 531. The steering-head bearings and the steering column follow normal motor cycle practice (that is, the steering column is not of the expanding type used on pedal cycles) and the head clip is a light alloy casting which includes the clips for the handlebars. On the steering-column lug two integral arms project forward and carry a steel spindle on which is mounted a steel roller surrounded by a rubber roller; a similar roller unit is car-

ried by two lugs brazed on the fork blades.

Running over these two sets of rollers are the four rubber suspension bands, arranged as inner and outer pairs side by side. Under normal conditions the two outer bands take the load, but as the depressed movement of the forks increases

brake and free wheel. This mechanism incorporates a fabric-lined brake and has the great merit that there are no ratchet and pawls to wear when the free wheel is in action; another point is that the machine can be wheeled backwards without bringing the brake into action.

The tyres are 26x2x1 3/4 in and sturdy



Largest machine in the range is the 125 c.c. Universal. The three-tube frame is exceptionally rigid

the two inner bands come into action. Damping is provided by the rubber to rubber contact between the bands and the rubber rollers, plus, of course, the damping effect inherent in rubber. At extreme depression, or should the suspension bands become unserviceable, the fork tubes make contact with rubber buffers round the arms of the column lug. The fork spindles operate in renewable "Oilite" self-lubricating bronze bushes. There is a 4in front-wheel brake operated by the handlebar lever, and in the rear hub is a Harwil back-pedalling

mudguards are fitted. To facilitate tyre repair, the rear mudguard, complete with carrier, is detachable at a point just behind the seat stays—merely by the removal of four bolts. The clip-up rear stand is robust enough and sufficiently wide at its base to allow the machine to be started when on the stand. An excellent feature in an autocycle.

Handlebar lugs are brazed on. The tank holds 11 pints of petrol and is fitted with a reserve tap and a large quick-action filler cap; underneath the cap is a separate oil measure. Below the saddle is a cylindrical tool box with a clip-on lid. The tank and engine shields, which, in addition to protecting the rider, induce an air draught for cooling, have cream panels; other enamelled parts are in black.

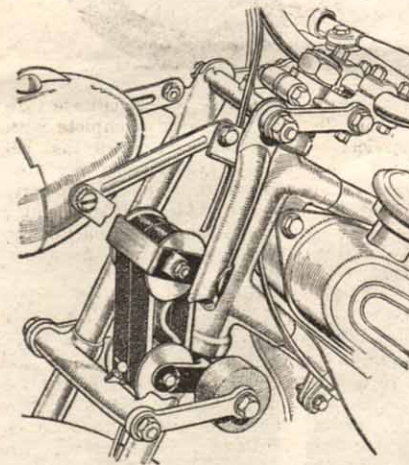
The Model 47/VI Autobyk is fitted with the 98 c.c. Villiers "Junior-de-Luxe" engine. The Super-Autobyk, Model 47/G2, has the Excelsior 98 c.c. (50x50 mm) "Goblin" two-speed engine-gear unit of extremely interesting design.

In one aluminium-alloy casting is the crankcase, the inner half of the primary chain case and the gear-box casing. Covers are fitted on the near side of the crankcase and gear box. The solid overhung crank in 60-ton steel is supported in the crankcase by a ball race and in the chain-case cover by a second ball race; between these bearings is the engine sprocket. The bobweight or crank-web has a pressed-in crank pin on which run the 0.1859 x 0.360in rollers, alternately steel and bronze; eight of each type make up the big-end bearing. On the inside

of the bearing is a hardened thrust washer and on the outside is a star washer retained by a rivet in the crank-pin. The nickel-chrome case-hardening steel connecting-rod operates direct on the big-end rollers. At the small end the connecting-rod has a fully floating phosphor-bronze bush with three oil ways. Bushes, too, are used in the gudgeon-pin bosses of the Hepolite aluminium piston and the gudgeon pin is retained by circlips.

Four studs retain the cast-iron cylinder which has eight ports. There are two inlet ports, two exhaust, and two lower and two upper transfer ports; two transfer ports in the piston mate with the lower ports in the cylinder. In the upper transfer ports are light-alloy deflector plugs which are machined and polished to give a precise contour for the purpose of controlling the flow of gas into the combustion chamber. These plugs are readily detachable and if cleaned periodically will ensure that the engine gives maximum efficiency.

The aluminium-alloy die-cast cylinder head is machined for metal-to-metal con-



New rubber suspension forks are fitted to both autocycles

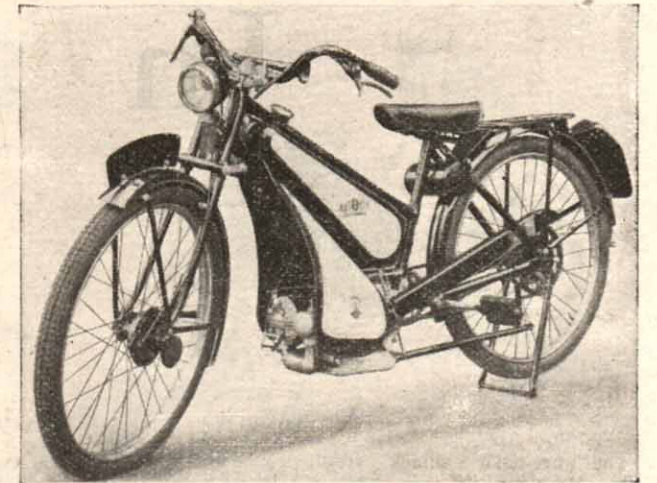
tact with the cylinder head and is retained by four studs.

Primary drive, totally enclosed and lubricated, is by "pre-stretched" 3/8 x 3/16 in chain to the cork-insert clutch. The gear box giving two overall ratios of 8.5 and 14.8 to 1 is of robust construction; the mainshaft runs in ball races and the layshaft in plain bronze bearings.

On the end of the mainshaft and outside the primary chaincase is the Miller flywheel magneto with 6-volt coils for direct lighting. The carburettor is a single-lever Amal fitted with a gauze at the air intake and with a strangler for cold starting. The complete "Goblin" unit with carburettor and flywheel magneto weighs only 3 1/2 lb.

The Super Autobyk has a larger head lamp than the Autobyk, but both incor-

Fitted with the 98 c.c. Villiers engine, the Autobyk is the lowest-priced model in the range



porate equipment for dry-battery parking lights. Further, the Super Autobyk has a larger saddle.

A short road test of the latter model showed that it has good low-speed pulling and two-strokes outstandingly well at all speeds—even when not under load. The two-speed gear is commendably positive in operation and raises the usefulness of the Super Autobyk above that of the single-speed autocycle. The new rubber suspension forks and the large saddle give a high degree of comfort.

Three-tube Frame

The largest machine in the present Excelsior range is the Model 47/LO Universal. This machine is fitted with the 125 c.c. Villiers Mark 9D engine-gear unit with the Villiers single-lever carburettor incorporating a strangler for starting and an "Air-Maze" air filter. Ignition and lighting is from the Villiers flywheel magneto; the large head lamp has a 24x24 watt main bulb and provision for dry-battery parking lights.

Of particular interest is the frame. This comprises only three tubes. The first runs from the head lug and curves under the engine to the chainstay bridge lug. The top tube extends to the saddle pivot where it curves round to form the seat tube. Finally, seat stays

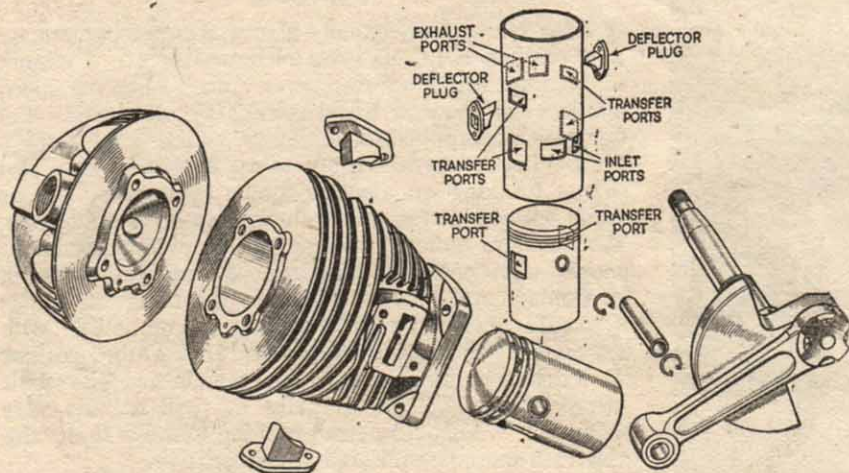
and chainstays are one tube suitably fashioned; the two ends are brazed in the bridge lug and the saddle pivot lug joins the curve at the top of the seat stays to the curve of the top-cum-seat tube. The frame has brazed-up lugs for all fittings.

The front parallel-ruler type forks have pressed steel blades. "Oilite" renewable bushes are used for the spindle bearings and locking tabs are provided for the spindle nuts. The brakes are 4in in diameter and the tyres 2.75x19in. The all-steel welded tank has a capacity of 2 3/4 gallons of petrol. In the top of the tank is the gate for the three-speed gear change lever which is light and positive in action. All handlebar lugs are brazed on. An easily operated spring-up central stand is fitted which lifts the rear wheel well clear of the ground. Both the handlebars and the footrests are adjustable. This model is attractively finished in maroon with cream tank panels.

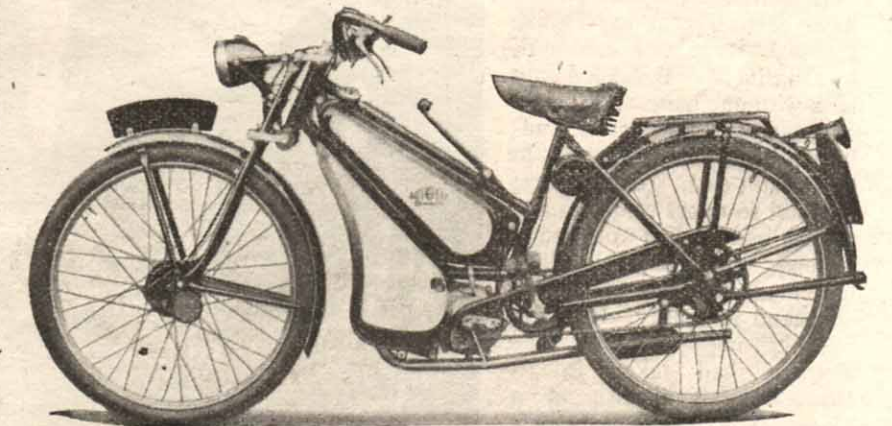
PRICES

Model.	Basic Price.			Purchase Tax.			Total.		
	£	s	d	£	s	d	£	s	d
Autobyk	39	10	0	10	13	4	50	3	4
Super Auto.	48	10	0	13	11	11	61	11	11
Universal	60	10	0	16	6	9	76	16	9

(Speedometer, if required on the Autobyk and Super Autobyk, costs £3 3s 6d when ordered separately. On the Universal a speedometer is compulsory and costs £3 3s 6d plus 17s 2d purchase tax.)

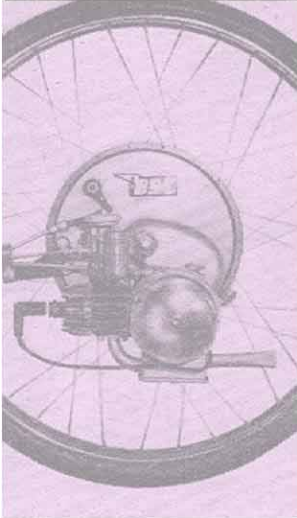
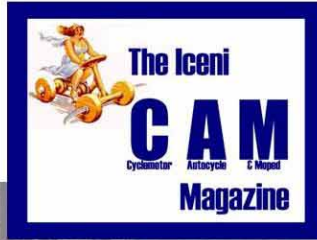


Components of the 98 c.c. Goblin engine. Of particular interest are the overhung crank and the eight-port arrangement with detachable light-alloy deflector plugs in the top transfer ports



The Super Autobyk, which has the interesting Goblin 98 c.c. engine unit incorporating a 2-speed gear

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