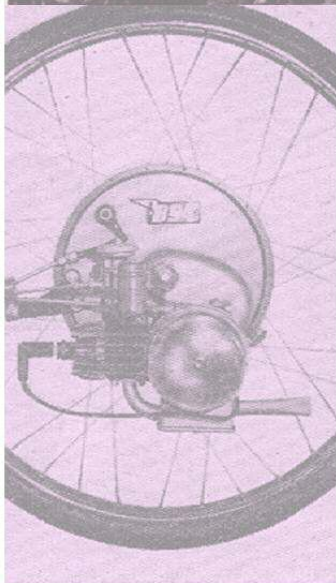


IceniCAM Information Service



CHAPTER VI

THE AUTO-MINOR (ABJ)

A. B. JACKSON (CYCLES) LTD.
300 Icknield Port Rd., Birmingham, 16

DESIGNED as part of a complete autocycle-type machine, the Auto-Minor engine is not sold separately from the A. B. Jackson cycle into which it is built. A two-stroke of 49 c.c., it is substantially "over-square," the 42 mm. bore being much larger than the stroke (36 mm.). The engine is mounted upon a pin fitting into the front fork crown. This provides a pivot upon which the engine is readily swung, from the free position, to drive the front tyre by a friction roller.

The die-cast flat-top piston has a floating gudgeon-pin held by circlips. Transverse flow porting directs the incoming fuel stream clear of contamination by outgoing exhaust gases. Cylinder head and crankcase are die-cast in DTD aluminium alloy, and a cast-iron barrel, spigoting deeply into the crankcase, is held between them by four long bolts. The head carries a decompressor.

The connecting rod, of stamped nickel steel, has a needle-roller big-end bearing. The crankshaft is drop-forged from carbon steel and carried on 17 mm. ball-bearings. It is extended to mount the friction drive roller and beyond this the Miller flywheel-magneto. At its outer end the crankshaft runs smoothly in needle-roller bearings.

The Carburettor. A bottom-feed Amal carburettor supplies a mixture of 1 part oil to 20 of petrol from the square half-gallon tank above the engine. As the air intake of the carburettor points upwards it is simple to operate the air flap while riding.

The Magneto. The Miller magneto includes the refinement of lighting coils. A 3-watt headlamp is positioned at the right side of the front forks and a rear light is, of course, also provided.

Enclosing the engine is a sheet-metal cover. The square front of this matches the appearance of the fuel tank and also provides a site for the transverse front number-plate. To the rear the engine cover tapers downwards with rather the effect of a roll-top desk. Only the bottom of the flywheel magneto on the off-side, and the exhaust pipe and silencer on the near-side, are visible with the cover in position. The fuel tank projects upwards immediately in

front of the steering head with the filler cap just below the middle of the handlebars.

To the left of the tank the carburettor air flap is accessible with the cover in position. Olive green is the standard finish on the whole cycle, engine cover, and fuel tank, relieved by a neat gold name badge on each side of the tank. Equipment is complete, there being a sturdy rear carrier with number-plate and rear lamp attached, a touring bag at the rear of the large saddle, a chain

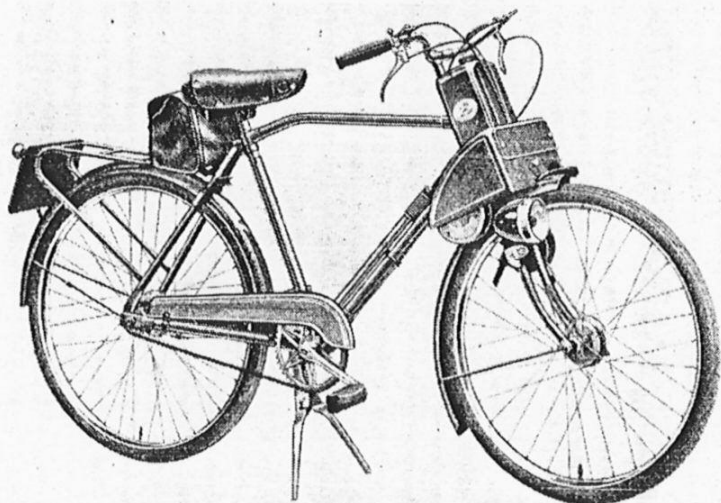


FIG. 9. THE AUTO-MINOR (ABJ)

Complete machine shown.

guard, and a centre stand. Other features appealing to the owner are internal expanding-brakes, substantial motor-cycle type of rubber handle-grips, and all-rubber pedals.

The short stroke of the engine makes it compact enough to carry fore and aft at the near-side of the forks, head pointing forward. The crankcase carries a drilled boss, and through this passes a slot-headed bolt to engage in a transverse drilling through the fork crown.

Upon the right-hand side of the crankcase there abuts, at the point of exit of the crankshaft, a cowling which three-quarter encloses the shaft extension and the carborundum-faced roller locked upon it. This cowling passes immediately behind the fork crown. At its right, or off-side end, there is located the magneto back-plate, and beyond it the flywheel, enclosed in the magneto cover. A boss, symmetrical with the crankcase boss, projects

from the magneto backplate, and is similarly bolted to the fork crown.

At the base of the crankcase is another extension or boss. Through this passes a spring-loaded bolt. This slides in a slotted steel strip, the lower end of which is clipped securely half-way

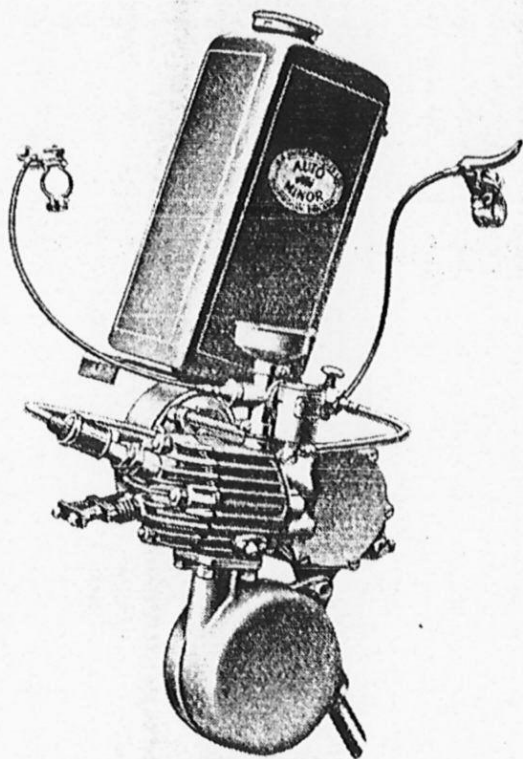


FIG. 10. THE AUTO-MINOR (ABJ)

Engine only shown.

down the near-side fork member. It comes up behind the roller cowling, and its purpose is to enable the engine to be set to "drive" or "free" positions. There is no quick way of doing this and the rider must dismount and take a spanner to the spring-loaded bolt.

The carburettor mounting is unusual in that the needle-type Amal is bolted direct to a very short vertical induction stub. Though the float chamber has naturally to be vertical also, the throttle barrel lies horizontally with the control cable emerging forward and the air cowl, as already mentioned, pointing straight up.

Exhaust discharge is correspondingly short, a drum-shaped expansion chamber being bolted to the downward-pointing port by a very short tangential stub ending in a suitable flange. The gases thus enter the drum at a tangent, and find their way out at the far side by an exit similarly tangential into a small-diameter pipe which directs them outwards and downwards. The design should result in the force of the gases being well spent without back pressure before they emerge into the air.

The 14 mm. Lodge plug is demountable and the ignition lead snaps on through a cap of insulating material. The Miller flywheel-magneto is highly accessible and to reach the contact-breaker points a circular plate retained by three screws is removed from the outside of the flywheel (there is no cover in the Miller instrument). The gap, it should be noted, is 0.015 in., a shade less than usual. Adjustment can be performed with a screwdriver and feeler gauge, as in similar rotating-magnet instruments, through an aperture in the flywheel. Once again a warning must be repeated that the operator should remove and place well clear of the field of the powerful magnet any wrist-watch or even pocket watch!

The direct lighting set, which works as long as the engine is running, takes 6-volt bulbs and the $\frac{1}{2}$ -amp. front bulb should give a good beam. The rear-lamp bulb takes 0.04 amp. and it is a good idea to carry a couple of spares for each. A battery is needed if a parking light is wanted.

The makers claim a maximum speed of 25 m.p.h. and there is no doubt that each gallon of "petrol" should yield more than 200 miles. The cycle is obtainable either with top tube (model AM) or open frame (AML).