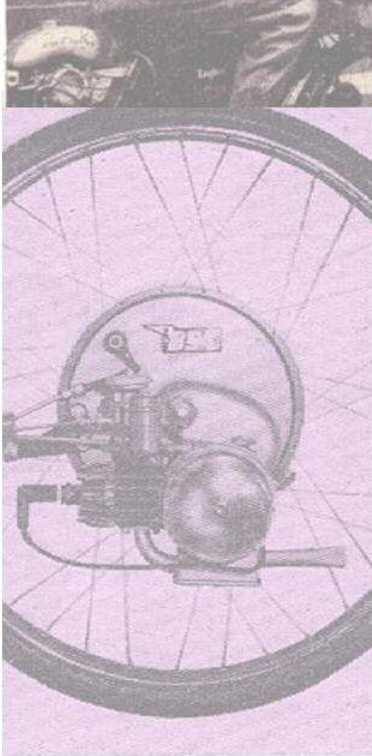


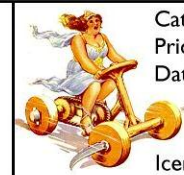
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# WORK ON THE ITOM ENGINE

Periodic tasks to keep this moped  
power unit in good shape

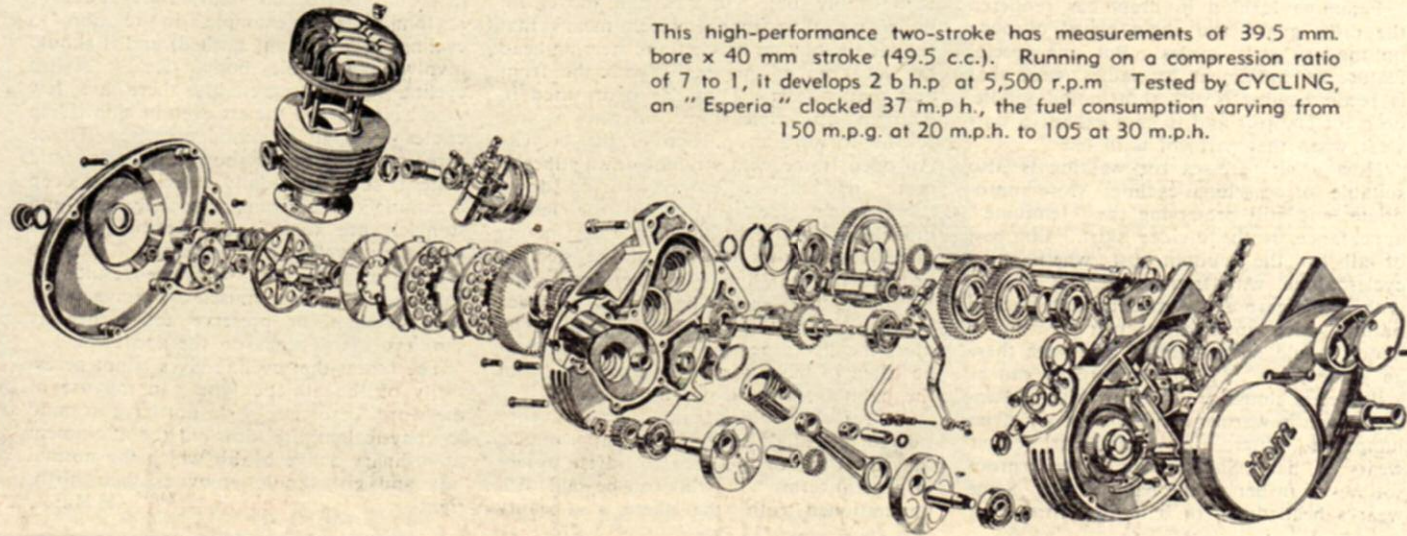


and takes up the drive. Above 2½ m.p.h. the

## THE ITOM ESPERIA ENGINE

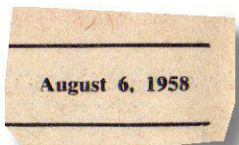
An "exploded" view of the Itom "Esperia" engine/gearbox unit, the maintenance of which is described on page 99.

This high-performance two-stroke has measurements of 39.5 mm. bore x 40 mm stroke (49.5 c.c.). Running on a compression ratio of 7 to 1, it develops 2 b.h.p. at 5,500 r.p.m. Tested by CYCLING, an "Esperia" clocked 37 m.p.h., the fuel consumption varying from 150 m.p.g. at 20 m.p.h. to 105 at 30 m.p.h.



A20





**P**ROVIDING that the Iton "Esperia's" full power is not used indiscriminately all the time the machine is on the road, this should be a power unit of exceptional longevity, since even at above-average cruising speeds it should be working well within its limits, with consequent beneficial results from the reduced internal stresses.

However, no unit, however good, can hope to work efficiently if it is not given the benefit of occasional, but methodical, care by its owner, and though the invariable rule with any engine is to "leave well alone" if it is running properly, there are a few jobs which need to be done at set intervals if the engine is to give of its best

All two-strokes, for example, are fussy about the grade and condition of the sparking plugs which are fitted. When you received your "Esperia" from the dealer it was equipped with a plug of exactly the right grade, able to withstand just so much heat and just so much oil without giving trouble. When replacement of the plug becomes necessary — as it will once the plug electrodes have become badly worn—it is essential that the replacement should be of the same type or, at the least, should be an exact equivalent. Suitable plugs are of K.L.G. F70 grade. Since so much depends upon the condition of the plug, it is wise to remove it once a week and clean it carefully with a stiff wire brush until all carbon and metallic adherence has been removed. Then use a feeler gauge to check the gap between the electrodes. This should be no less than .018 in. and no more than .020 in. Even a slight variation from these settings can have a deleterious effect upon performance.

**MOPED  
 MAINTENANCE**

So far as decarbonizing is concerned, it is recommended that the private owner should work on the "leave well alone" principle already enunciated — there is no point in disturbing an engine which is running well simply to fit in with a preconceived schedule. Thus the manufacturers are content to note that after one or two thousand miles of road work the average "Esperia" engine will probably begin to lose a little power owing to carbon forming in the exhaust port and the silencer, and that a more pronounced power loss, requiring a complete "de-coke," will be evident after two or three thousand miles.

Taking the former case first, the drill is simply to remove the exhaust system. This is held by a finned ring to the exhaust stub and by 10mm. and 11mm. nuts on a frame clamp and the silencer. Free the ring first, using a C-spanner, and then undo the nuts, so that the pipe

and silencer can be taken off the machine. Rotate the pedals to bring the piston to the bottom of the bore and inspect the exhaust port. If fouling is pronounced there, carefully chip it away with a blunt scraper, taking especial pains not to flick chippings into the cylinder.

Now ease off the clip at the end of the silencer. This has two pegs which pass through the body and engage with holes in the tail pipe. Once the clip has been removed, the tail pipe can be withdrawn from the body of the silencer and cleaned with a wire brush. If any of the baffle holes are blocked they must be poked clear.

Remove the silencer body from the exhaust pipe and examine both for signs of carbon. If there are heavy deposits, use an old length of chain to clear the pipe and a stiff wire brush to free the silencer of fouling. Then reassemble the complete system and offer it up to the machine, fixing the frame bolt first and the finned ring last.

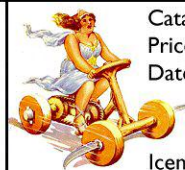
When full "de-cokes" have to be carried out, the procedure is the same so far as the exhaust system is concerned. The four 10mm. nuts which secure the cylinder head must be removed, using a box spanner, and the head lifted off. An open-ended spanner will be required to loosen the four 10 mm. nuts which secure the barrel at its base flange.

It is not essential to remove the piston from the connecting rod, but you should remember to seal the crankcase mouth with clean, non-fluffy rag before beginning to scrape the carbon from the piston crown. When this has been thoroughly cleaned, spring each ring out of its groove, and scrape the grooves clear of carbon. A piece of broken piston ring makes an excellent tool for the job. Scrape the insides of the rings, too, before placing them.

It is the head which is next on the list for attention. Clean it thoroughly, and then use a blunt scraper to clear each port in the barrel. Reassembly can now commence.

Smear the piston with oil, and put some grease on the base gasket. Now place the gasket in position on the bottom of the barrel, and ease the barrel over the piston, feeding each ring in turn into the bore by compressing it with the fingers against its stop. Guide the barrel over its studs, and press it down to seat it. Now add the four holding-down nuts, and tighten each a little at a time till all are tight. Now replace the head and repeat the performance with the head nuts. Replace the carburetter on to its stub, fix the exhaust system; clean and gap the plug and replace it; connect the plug lead and your "Esperia" engine will be in good fettle.





As with the Itom engine, the drill with the rest of the "Esperia" moped is to leave well alone if all is running properly. This adage, however, must be used with discretion, for there are certain jobs to be done and if these are neglected the machine will *not* run properly for very long.

On the cycle side, there are three vital tasks. Once every week, it is essential that you should check the tension of the rear chain. This should have a play of no more than one inch up and down (that is, half an inch each way) on the bottom run. If it is too tight, power will be wasted and the sprockets will wear rapidly. If it is too slack the sprockets will soon become "hooked" and the chain will be robbed of thousands of miles of useful life. Adjustment is simply a matter of loosening the rear spindle nuts and drawing the wheel back slightly with the draw-bolts. Check that the wheel is not out of centre, and re-lock the spindle nuts, once the chain tension is correct.

### Weekly Check

Equally important is a weekly check on the brakes. As the shoes wear, the brakes lose power very gradually — so gradually, in fact, that the rider does not notice it until an emergency arrives. Then it may be too late. . . . Once every week, then, take up play on the brake cable adjusters, setting each brake so that it comes into action quickly, but smoothly. It is best to rack out each adjuster until the brake shoes begin to rub on the drum when the wheel is turned, then to let the adjuster out slowly until no rubbing noise can be heard. Test each brake with this setting. If its action is a little fierce let out the adjustment a little more until you find the setting which suits you best.

### Gearbox Oil

Every 400-600 miles, the oil level in the gearbox needs to be checked by removing the slotted screw on the offside gear-case cover, just behind the pedal spindle. Oil should ooze from the hole. If it does not, you must remove the filler plug — the similar slotted screw in the drip tray atop the gearbox — and pour in fresh oil of S.A.E.50 grade until oozing commences. Then replace both plugs tightly.

Every 1,000 miles, with the engine warm, you should remove the drain plug beneath the unit and allow all the oil to drain away. Then refill with S.A.E.50 oil — after replacing the drain plug and removing the level plug, of course. You will need about two-fifths of a pint for the job.

A weekly task is to give each grease nipple on the machine a shot or two with a grease gun, to smear a little thick oil on to all cables and pivots, and to check each nut

and bolt for tightness. The tyres should be inflated weekly, as well, if tyre wear is to be kept to a minimum.

Carburation is by means of a Dell'Orto instrument with plunger-pump priming. Unlike most other moped producers, however, Itom do not advise constant cleaning of the instrument, preferring rather that it should be completely dismantled for cleaning once in three thousand miles. It is a conventional needle-valve job, with screw-retained tops to the mixing chamber and float chamber, and a mesh-type fuel filter contained in the banjo union on the float chamber. This union is held by a hexagon and is easily removed to permit access to the filter, which should be cleaned if blockage is suspected.

### Carburettor Dismantling

To dismantle the instrument, free its clamping bolt and draw it off the inlet stub. With a screwdriver, undo the screw securing the mixing chamber top, and draw out the valve and needle. Two screws secure the float-chamber cover, and the plunger-pump mechanism. The air filter has a central screw holding its cover in place, and removal of this provides access to the oil-wetted, wire-mesh filter element.

Although the magneto is of a make comparatively unknown in Britain — Dansi — it is of quite conventional design and should provide no headaches. It is reached by removing the near-side pedal crank and the near-side crankcase cover, which involves freeing the gear cable from its solderless nipple and chain in the small compartment at the rear of the case.

All that you need do, as a general rule, is to check the gap between the contact breaker points. This should be between .013 and .015-in. Adjustment is effected in the usual manner — by freeing a screw which clamps the plate carrying the fixed point, and moving the point until the gap is right.

Again, this is a job which most manufacturers recommend should be done at set intervals, whereas Itom maintain that it should be left alone unless the owner suspects that the points are dirty, pitted, or out of adjustment.

### Clutch Assembly

The clutch assembly is robust, and should not need much attention. Initial clutch adjustment is by means of the cable adjuster, but there is an internal screw-type adjuster also. This takes the form of a slotted grub screw, locked by a nut, which bears on the end of the clutch rod. It is reached by removing the cap on the clutch housing in the right-hand engine cover. Holding the grub screw with a screwdriver, loosen the lock nut, and slacken the screw a turn or two to reduce any tendency to clutch slip, subsequently re-locking the nut.

THE REST OF  
THE ITOM  
The Cycle Parts, the Carburettor, and the  
Magneto of the Moped from Turin