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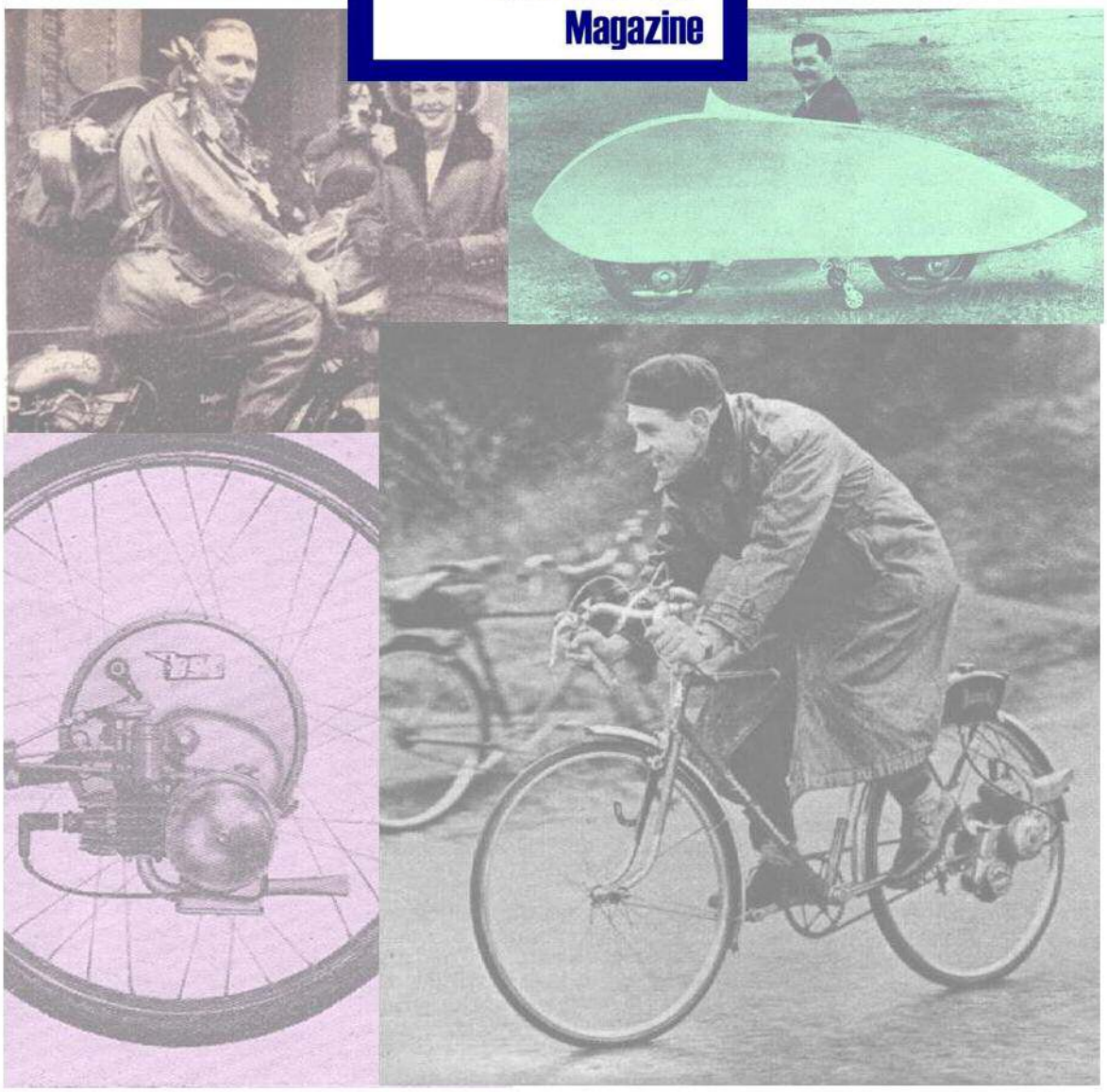

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LOOKING AFTER THE H.M.W. ENGINE

A simple but powerful two-stroke unit fitted to various mopeds

Maintaining Your Moped No. 22

DESIGNED by a Dutchman and built by an Austrian factory, the 48 c.c. H.M.W. two-stroke engine has become a firm favourite in Britain. It is fitted, of course, to the H.M.W. range of mopeds, comprising the two-speed "Luxus" and "Supersport" models and the more lately introduced three-speed "Supersport." In addition, it has been seen, as a proprietary unit, on such models as the Centro Two-seater and the Vesting "Pesetta."

In no case is maintenance difficult—in fact, this H.M.W. unit is probably one of the simplest to work upon, despite its high performance and power. Let us take the case of a three-speed engine fitted to a "Supersport" machine, and follow through the various stages of decarbonizing.

Since there is no top fixing to the frame on the cylinder head, the whole unit is freely exposed. The first job will be to remove the exhaust system, which consists of the usual pipe, clamped to which is an elongated silencer with a short, detachable tail-pipe. The exhaust pipe is connected to the cylinder by a screw-in plug, which is slotted around its periphery. To unscrew this a C-spanner is required. Once it has been undone, there remains but one bolt—a 10 mm.—holding the exhaust system to the machine. This is located on the silencer. Its removal will enable the complete assembly to be lifted away.

Access to the silencer baffles, which should always be cleaned out when the moped is being decarbonized, is gained quite simply. All that needs be done is to loosen the 10-mm. nut and bolt on the clamp holding the tail-pipe in place, when the pipe can be detached from the silencer, bringing the baffles with it. That done, the front clamp can also be loosened, and the silencer drawn off the pipe. There will probably be no work to do on the main body of the silencer, but it is always advisable thoroughly to clean the interior of the exhaust pipe. Hard carbon can be cleared by passing through the pipe a length of old chain, and then working this to and fro and round and round until all carbon is scraped away. Alternatively, a wire brush on a long, flexible, wire handle can be employed.

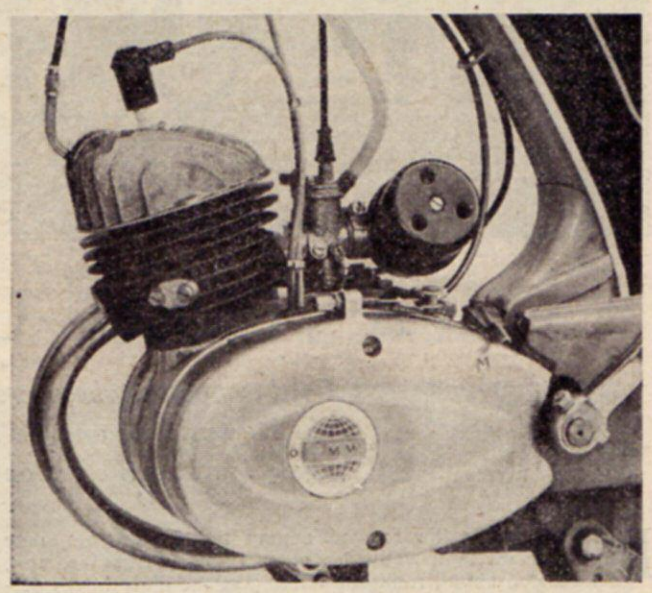
With the tail-pipe and exhaust pipe cleaned, and the silencer body inspected and cleaned if necessary, the exhaust system can be reassembled, ready for fitting when the rest of the work has been done. For a "top de-coke" it is necessary merely to remove the cylinder head. This will entail disconnecting the decompressor cable. First, remove the split pin which you will find on the tumbler arm of the decompressor. This enables the small spindle on which the arm pivots to be slipped out of its seating. It is then a simple matter to unhook the inner cable nipple from its housing in the cylinder head, and thus to free the head of encumbrance prior to removal.

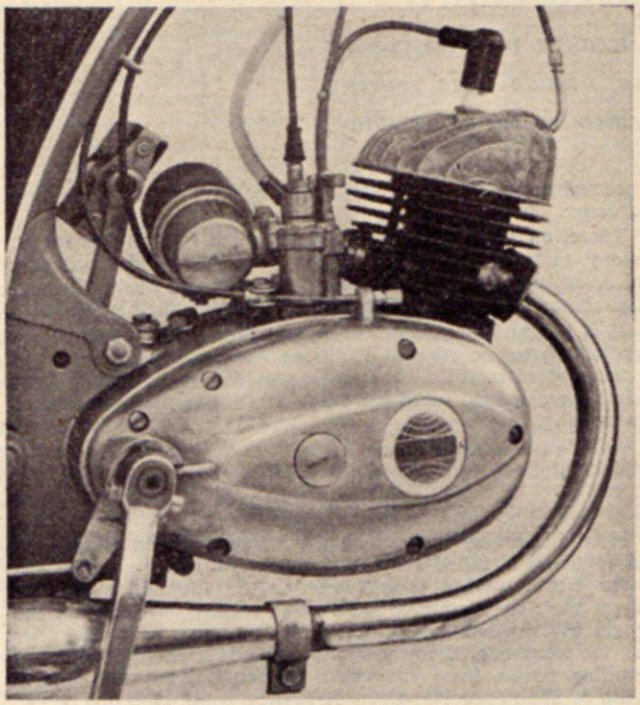
Now, using a 10 mm. box spanner, undo all four cylinder head nuts, and remove the head. If you do not intend to disturb the barrel, replace two of the nuts and screw them down to hold the barrel in place. This will prevent breakage of the gasket located at the base of the cylinder. Now turn the engine over so that the piston comes to top dead centre, and with a blunt scraper remove as much carbon as possible from the piston crown. Finish off with some very fine emery cloth, leaving the piston crown clean and shining.

Next it's the turn of the exhaust port. Bring the piston to the bottom of its travel, and chip the carbon out of the port, working from the exhaust-pipe end. It is important that the port should be completely unobstructed. Carefully blow away all carbon dust by inserting a tyre pump into the barrel and giving one or two hearty blasts. Then wash out with petrol to clear any chippings that remain.

Lastly, repeat the performance with the cylinder head, paying especial attention to the area around the sparking plug, which is particularly sensitive to carbon deposits. If the decompresser valve shows signs of leakage over its seatings—pitting, or streaks of soot—it must be detached for grinding-in.

Should barrel removal be necessary, you will have to detach the carburetter from the inlet stub before proceeding to lift the barrel. The usual two rings are fitted to the piston, and these should be detached and the grooves cleaned out, using a shaped piece of broken piston ring as a scraper. The inside of each ring should also be freed from carbon.





These two views of the two-speed H.M.W. engine, together with last week's exploded drawing of the three-speed unit, should enable the private owner to "find his way around" this popular two-stroke without difficulty.

MORE WORK ON THE H.M.W.

Hints and tips on carburetter, electrical and frame maintenance

IN last week's issue, we gave advice on the decarbonizing of the popular H.M.W. engine, noting at the time that the unit was employed on a number of machines other than those of H.M.W. manufacture. Part of this article, too, will be applicable to other makes of machine, since we shall be touching on the checking of the Dell'Orto carburetter and the Bosch flywheel magneto-generator, but it should be stressed that the references to cycle parts apply only to the H.M.W. "Supersport" models, though some of them are applicable to the touring-type H.M.W. "Luxus."

First, the carburetter—an Italian instrument. Here there is only one routine task to be carried out—cleaning and oiling the air filter. This is a job which should be done once every 600 miles or so. The filter, though outwardly of unfamiliar type, is really quite conventional, consisting simply of an oil-wetted wire wool element enclosed in a right-angled case. To free the element it is necessary only to undo the single central screw retaining the plastic filter cover, which can then be lifted off to bare the filter element. This should be detached and thoroughly washed in clean petrol to remove all dirt. This done, it should be shaken clear of petrol and immersed for five or ten minutes in thin engine oil—clean oil, of course—and then well drained before refitting.

Carburetter Cleaning

Jet blockages are very rare with the Dell'Orto carburetter. However, if such trouble is suspected it is an easy matter to remove the jet, which is situated on the right-hand side of the instrument, low down on the body—a brass screw which is child's play to reach and detach. Provided the fuel filter in the banjo atop the float chamber is kept in good shape, however, it is unlikely that this trouble will be experienced. For the rest, the Dell'Orto carburetter is of conventional needle-valve type, and should require no work beyond a periodic check for the tightness of the mixing chamber top and the nuts securing it to the barrel.

Of Bosch manufacture, the flywheel magneto is located behind the left-hand crankcase cover, which must be removed when work is to be done on the electrics. It is held in place by cheese-headed screws and, a word of warning, it is essential to take the case off **in a forward direction** when dismantling, since part of the gear selector mechanism is mounted upon it, and it is possible to do damage by pulling the case off in any other direction.

A check should be made on the points once in 1,000 miles to see that they are clean and correctly gapped. A gap between the contacts of .012 to .015 in. is permissible, with preference given to the smaller figure. This should be in combination with a sparking plug gap of .018 to .020 in.

Adjustment is effected in the normal way by loosening, but not removing, the screw which locks the fixed point bearer plate, and then inserting a screwdriver into the two adjuster slots and twisting it to vary the gap which is, of course, to be measured with a feeler gauge. Then, still with the screwdriver in the adjuster slots, retighten the locking screw, subsequently checking on the gap to make sure that nothing moved before all was tightened up.

Another task which can be done at the 1,000-mile mark is changing the gearbox oil. The drain plug is one of the cheese-headed screws holding the right-hand crankcase cover in place, and it is painted red to identify it. Remove this, and permit all the oil to drain away, subsequently refilling with S.A.E. 20 oil through the filler plug—also painted red—atop the gearbox. To obtain access to this the carburetter will have to be swung out of the way temporarily.

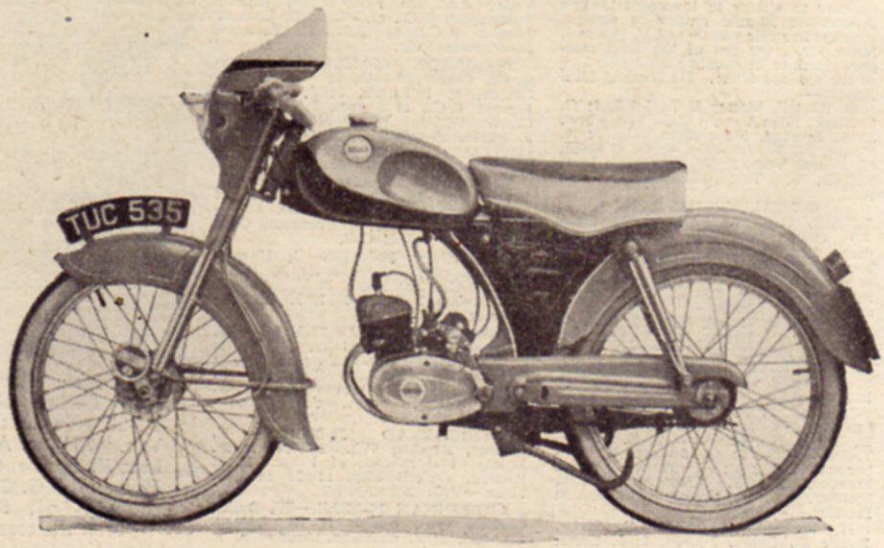
Gear adjustment on the three-speeder is by means of adjusters in the cables controlling the selector fork. An equal amount of play should be allowed on both cables at the twist-grip end, and the engagement of each gear checked individually. Clutch adjustment is by means of a screw on the clutch rod, hidden behind the slotted cap on the right-hand engine cover.

On the cycle side, there is very little to be done in the way of routine work. Every 500 miles it is as well to apply a shot of the grease gun to the grease nipple on each leg of the telescopic front fork, and the chain should be washed with petrol and smeared with engine oil once every 1,000 miles, and detached for a thorough wash and soak in grease once a year. When adjusting the chain, it is as well to remember that wheel alignment cannot be accurately judged by the position of the snail-cam adjusters, and that visual checking of this vital point is necessary. Between half and three-quarters of an inch of up and down play is required on the bottom run of the chain with the machine on its centre stand.

Head Bearing Adjustment

Should the head bearings require to be tightened at any time it will be necessary to remove the dashboard, which is held by two bolts and by the speedo cable. The large hexagonal lock-nut on the steering head stem can then be loosened, and any play in the head bearings taken up by turning the knurled ring beneath the lock-nut, which is subsequently relocked when the correct adjustment has been found.

Lastly, brake adjustment. That for the rear brake should not be set so that the brake operates too fiercely, since stamping on the pedals may lead to the bonded brake linings breaking up inside the drum. If this has happened it will be noticeable in drastically reduced braking power, combined with sloppiness in the braking system, and possible sticking of the back-pedalling mechanism.



The H.M.W. "Supersport" (right) is one of three H.M.W. machines to which the details given in this article can be applied.