

250 c.c. O.H.V. TWIN CYLINDER SCOOTER

DISMANTLING FOR DECARBONISING

The term decarbonising means the removal of all carbon deposits from the combustion chambers, piston crowns and ports. It is generally recognised as including attention to valves, guides and springs. Before commencing to decarbonise, it is desirable to have the following equipment available in case of need, in addition to the toolkit.

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| 1. Top overhaul gasket set number 00 3120. | 7. Valve grinding tool (suction type). 61-5035 |
| 2. Inlet valves number 76 60(2). | 8. Valve grinding paste. |
| 3. Exhaust valves number 76 61(2). | 9. Scrapers for removing carbon. |
| 4. Valve springs number 76-63(4) & 76 69(4). | 10. Set of feeler gauges. |
| 5. Valve guides number 76 15(4). | 11. Supply of clean engine oil. |
| 6. Valve spring compressor number 61-5001. | |

In order to carry out the work of decarbonising some dismantling is necessary and these instructions are for the guidance of owners wishing to undertake this job themselves. Care should be taken to avoid damage to nuts, bolts and other fixings by the use of incorrect tools, and as parts are removed the fixing bolts should be replaced and the nuts just started so that they are not lost and to facilitate reassembly.

Before the engine can be dismantled it is necessary first to remove the dual seat and side valances. The seat is held by two bolts and nuts securing "C" shaped brackets, and the side valances are secured by eleven bolts, all of which must be removed together with the dual seat catch knob.

Detach the sparking plug leads and remove the cylinder head cowl and rocker cover. The cowl is held by two nuts, one at each end of the cylinder head, and the cover by two nuts on top. Note that removal of the cowl does not release the exhaust pipe flanges and that it is necessary to take off two further nuts securing these flanges before the exhaust pipes can be moved away from the cylinder head.

There is no need to disturb the connection between the carburetter and its manifold. All that is necessary is to take off the two nuts securing the manifold to the cylinder head and the carburetter can then be moved sufficiently to one side to allow dismantling to proceed.

Slacken off the lower union of the rocker oil feed pipe and unscrew the upper union completely to allow the pipe to swing out of the way.

Remove the sparking plugs and take off the seven cylinder head nuts. These nuts will require a small cranked ring spanner to remove.

The cylinder head can now be taken from the block for decarbonising. This will reveal the cylinder head joint face gasket which should be removed and examined. Replacement is generally desirable.

Removal of carbon is best done using a simple scraper, but it is important to avoid damage to the soft aluminium cylinder head and piston crowns. Any marks on the joint faces will give rise to gas leakage and may lead to further damage by burning after the engine is reassembled. To facilitate attention to the pistons they should be turned to top dead centre (i.e., as far as they will come) and this position can be achieved by engaging top gear and rotating the rear wheel.

Having removed all traces of carbon, carefully clean all parts with a slightly oiled rag, being sure to move the pistons down the cylinders to enable carbon to be wiped from the top of the cylinder bores where it will have gathered above the top piston rings.

The opportunity should now be taken to examine the valves, and for this to be done they must be removed using Service Tool number 61-5001. The rockers need not be dismantled.

Be very careful not to lose the split collets which will be released when the valve spring has been compressed. It is a wise precaution to remove all the valves before continuing with any other work and to put them together with their respective collets and caps carefully on a shelf or in a box, indicating from which positions in the cylinder head they were removed.

Service Sheet No. 1002 (contd.)

Scrape all carbon from the inside of the ports, (i.e., the passages in the cylinder head which allow the entry and exit of gases.) Take care to avoid damage to the seats. (These are the angular faces in the cylinder head, which, when mated with similar seats on the valves, provide a gas-tight seal.) Clean up the valves by careful use of fine emery cloth.

Unless the engine has covered a considerable mileage, it is unlikely that anything but a simple grinding-in operation will be necessary to restore the valve seats to perfect condition. Valve grinding is done by smearing a small quantity of grinding paste (obtainable from any Dealer) on the valve faces, re-inserting them into their guides and rotating backwards and forwards. The valve should be moved round to a new position after every few movements. This should not be overdone, or in time valve pocketing, with consequent lack of efficiency, will develop.

If considerable pitting of the seats is evident they must be recut and the valves either reground or replaced. This is best left to a Dealer, who will have the necessary service tools.

Before reassembling, clean off all traces of paste and smear the parts with clean engine oil.

Reassembling is undertaken in the reverse order, but note should be taken that it is a wise precaution to replace valve springs when decarbonising. They are not expensive and replacement will help to maintain the efficiency and performance of the engine.

The part numbers of the valve springs are 76-69, 76-63, inner and outer respectively. When refitting valves particular care should be taken to ensure that the collets are correctly seated.

⚡The cylinder head holding down nuts should always be tightened in the order shown in Fig. 1, and each nut must be pulled down a little at a time to avoid distorting the head.

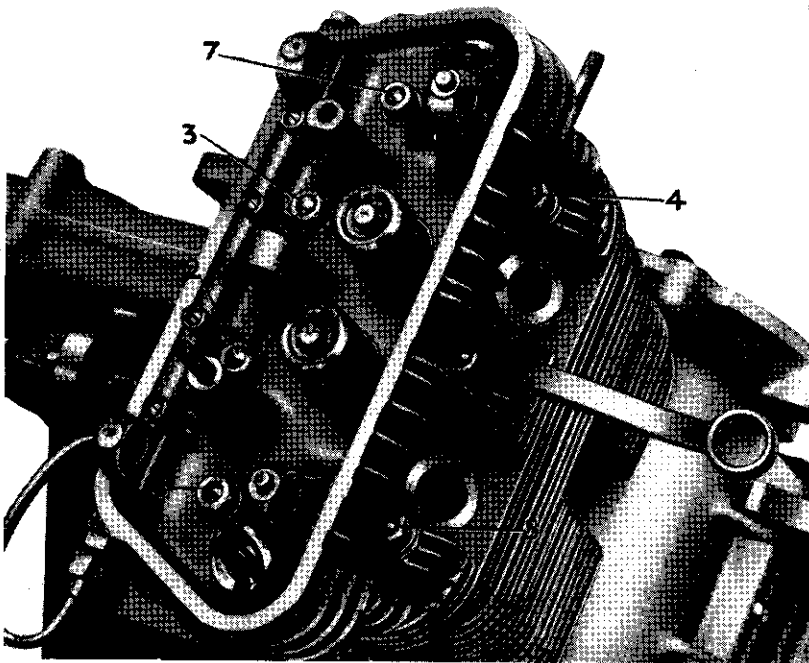


Fig. 1.
Cylinder Head Nut Tightening.