

AMC 250/350 LIGHTWEIGHT



□ Big singles have long been noted for their long, trouble-free lives and AJ'S and Matchless built their considerable reputations on such machines.

In 1959 the lightweight singles were introduced. These bikes, like their forerunners, had a fair turn of speed and miserly fuel consumption. They became very popular touring mounts which needed only the routine service and attention to keep them running sweetly.

Stripping the 250 cc and 350 cc lightweight models is not a difficult task. Most of the operations are obvious and the only special tools required for a basic engine overhaul (not including stripping and reassembling the flywheels) are: an extractor bolt for the automatic timing device, the small timing pinion extractor and clutch withdrawal tool. The latter is rarely needed, but it is useful in the case of a tight fit on the shaft.

Before attempting to separate the

crankcases you must remove the oil-pump plunger. Failure to do this will damage the cases beyond repair. Remove the oil pump guide-pin and sleeve, the large screwed plug and O ring. Finally, the plunger itself can be hooked out with a piece of stiff wire.

When reassembling the oil pump, check the small bolt for the oil-pump plunger, part No. 042046. The tip of this bolt sometimes breaks away.

Apply some clean oil to the oil-pump plunger and insert it into the crankcase to a depth of $1\frac{1}{16}$ in. from the screwed plug face. There is a guide-pin which engages with an annular slot in the plunger. Check this for wear. A small flat worn at the top end of this pin will curtail or cut off all oil to rocker gear.

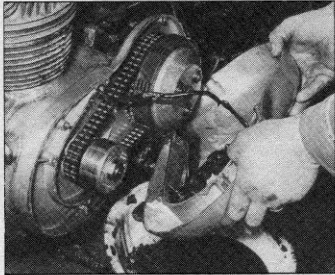
Care is needed when fitting this guide-pin. Screw in the sleeve with the guide-pin and ensure that the pin end engages with the annular groove in the plunger.

You might need to move the plunger slightly to get correct engagement, but whatever happens don't use a spanner until you are sure that the sleeve is fully home.

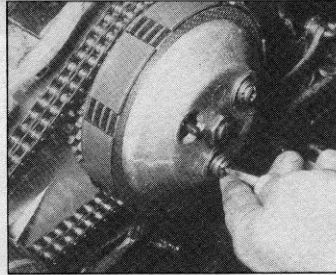
Lastly, fit the large screwed plug and washer firmly, as an air leak at this point could have an adverse effect on the whole lubrication system.

Valve timing is marked to facilitate reassembly, but for those who want the figures, the average valve timing taken with a 10 thou rocker clearance is: inlet valve opens 40 deg. BTDC, exhaust closes 40 deg. ATDC, with contact breaker gap - 12 thou. Ignition timing is set at $\frac{1}{4}$ in. BTDC fully advanced.

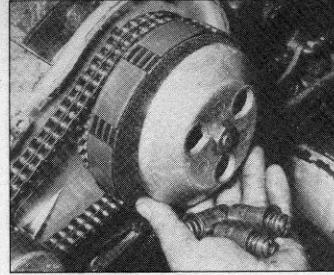
Anyone thinking of dismantling and rebuilding flywheels must have an arbour press at his disposal for reassembly. If you rely on tightening the crankpin nuts, the flywheels will flex under load and the crankpin will surely break.



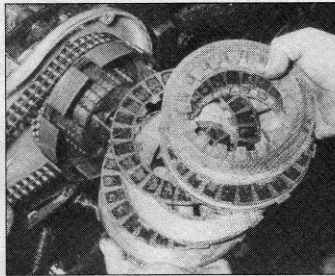
1 With the petrol tank and carb removed, drain oil and remove primary chaincase outer. Disconnect wiring and pull stator wires through.



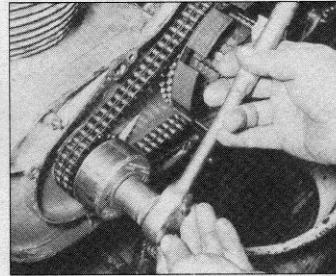
2 Undo clutch springs.



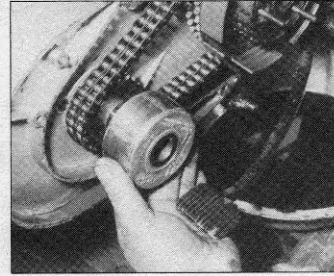
2a Remove with cups and take off pressure plate.



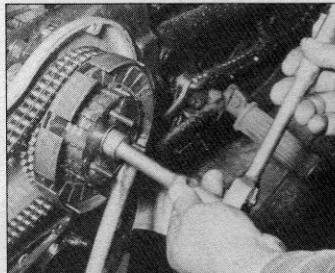
2b There are seven plates – note their order.



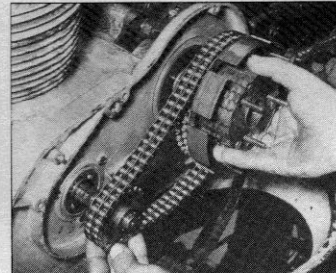
3 Lock the engine up and undo mainshaft nut.



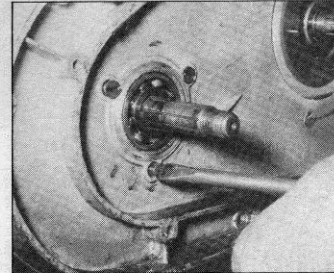
3a Pull rotor off, taking care to keep the Woodruff key.



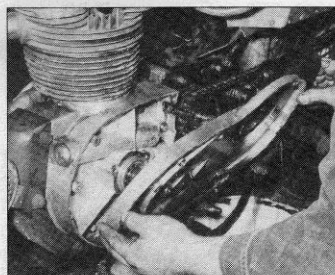
3b With the transmission locked (in gear, back brake on) undo the clutch centre nut.



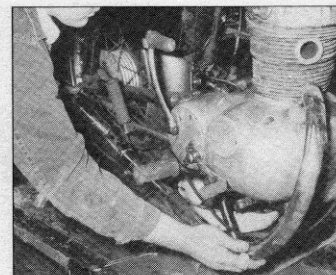
3c Lift the primary drive off as one.



3d The screws holding the primary inner case are now revealed. Undo them.



4 Lift the inner case off. Disconnect the chain by removing the split link.



4a Remove the exhaust system at this stage.

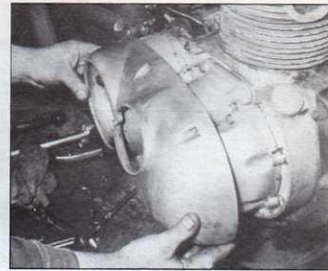


5 On the timing side, take the footrest off.

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6 Then the gear lever and kickstart.



6a Undo the screws and remove the outer cover.



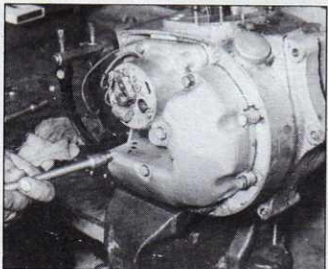
9 ... don't overlook the one inside the cover.



10 Lift out pushrods and label them IN and EX. Examine cups for damage.



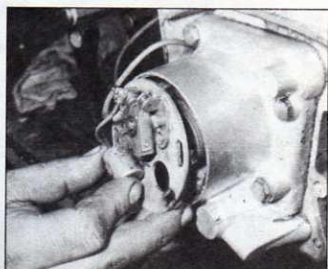
11 Four sleeve nuts and one bolt hold head on studs - the nuts have spacers.



14 Remove bolts holding inner cover - note bolt lengths.



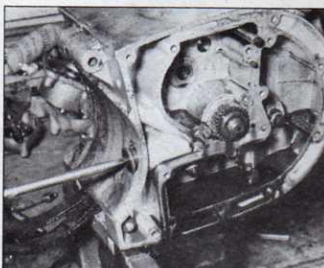
14a Have a tray ready to catch oil.



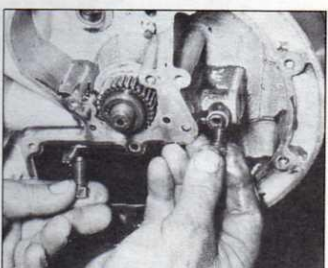
15 The ignition plate comes away complete.



19 Remove cam followers, noting spacers. Smaller of the two goes in the middle.



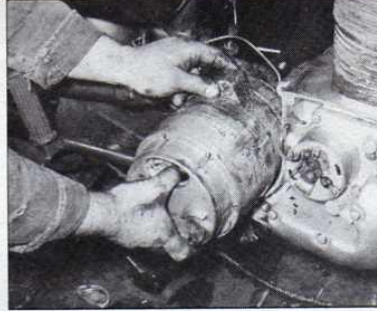
20 Oil pump plunger must be removed before splitting cases. Undo screw plug at rear.



21 Then undo oil pump guide pin and sleeve. Insert a rod in spindle hole to extract oil pump plunger.



7 Release the two clamp nuts holding gearbox and undo all timing side engine plates. Note spacers on the gearbox adjuster bolts.



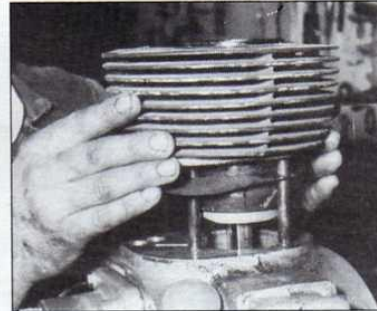
8 Pull gearbox out, then the five studs holding crankcase in frame. Lift engine out rearwards.



8a With the engine on a bench, remove nine bolts holding rocker box to cylinder head . . .



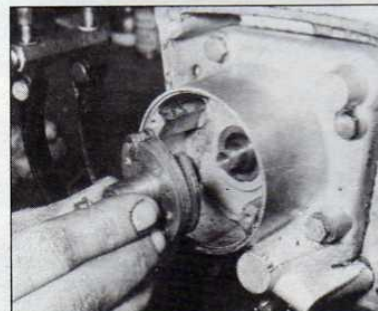
11a Lift the head and examine the gasket.



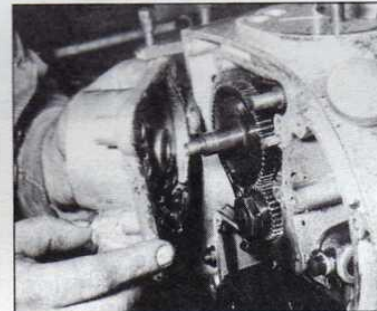
12 Lift the barrel slightly, stuff the crankcase mouth with cloth, then pull barrel off.



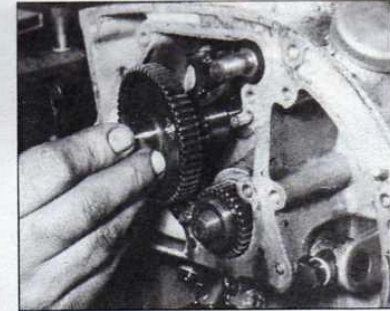
13 Use round nose pliers to extract gudgeon pin circlip. If pin does not slide out easily, apply gentle heat.



16 To remove automatic advance unit, take out retaining bolt and insert withdrawing bolt (AMC part no.042247); screw home and tap.



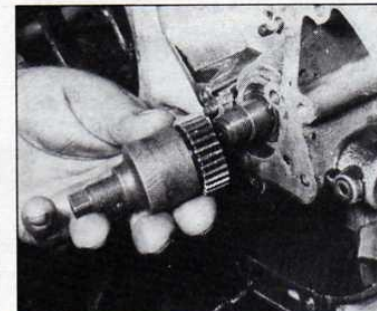
17 Camwheel and small timing wheel are marked for reassembly. With piston at TDC, small wheel mark points to 11 o'clock.



18 By lifting the cam followers then inserting camwheel with marks aligning, timing is restored during reassembly.



22 The plunger coming out - check the worm for wear and renew screw-plug O-ring.



23 Take off mainshaft nut and pinion can be withdrawn. Special tool is AMC part no.043332. Watch out for Woodruff key.



24 Undo crankcase bolts and heat cases. Halves will then separate leaving ball bearing in case. Renew mains and big-end as necessary.