BSA SERVICE SHEET No. 903

June 1957

Dandy 70

REMOVAL OF ENGINE FROM FRAME, DISMANTLING AND RE-ASSEMBLING

Take off the carburetter cover plate "B," Fig. Z2, which is retained by three screws, and pull the carburetter away from the crankcase leaving the cable and petrol pipe attached. Tie the instrument up out of harms way.

Remove the right-hand wheel spindle nut and the two bolts holding the swinging arm blade to the rear fork (see Fig. Z1, Service Sheet No. 902). Partly withdraw the wheel spindle towards the left-hand side.

Disconnect the lead from the generator at the snap connector which will be found inside the frame behind the large rubber cover. Pull the lead clear of the frame.

Unscrew the six nuts "A," Fig. Z2. Take off the engine plate. The engine can now be drawn away complete with the silencer and the swinging arm blade.

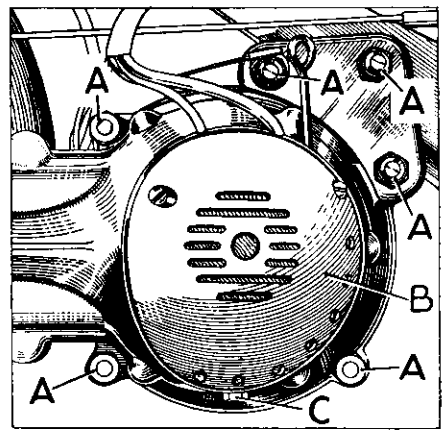

Fig. Z2. Removing Engine.

CONTACT POINTS -WICO GENERATOR

If the purpose in removing the engine is to clean or adjust the contact-breaker points "B," Fig. Z3, the flywheel must be drawn off. Bend back the locking washer and unscrew the nut, holding the flywheel by inserting Service Tool No. 61-3551 through the two holes in the sides of the clutch driving cup. A suitable tommy bar or long bolt placed in one of the crankcase lugs will prevent rotation.

The mainshaft is a parallel fit in the flywheel, which is keyed in position. To withdraw the flywheel use Service Tool No. 61-3540, or a pair of No. 61-3548 in conjuction with an Extractor No. 61-3256.

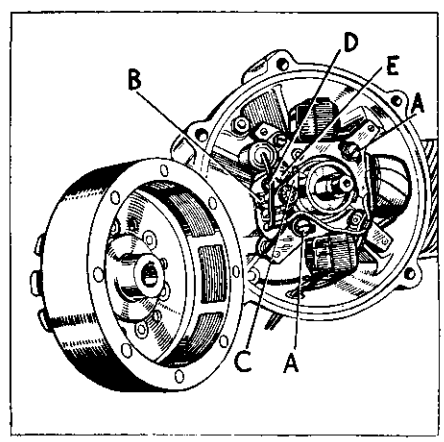

Fig. Z3. Generator (Wico)

Turn the engine until the points are fully open and adjust the gap to .018"—.020" by slackening the fixing screw "D" and turning the eccentric adjusting screw "E." Re-tighten the fixing screw.

To remove the points assembly; take out the fixing screw and detach the two wires which are secured by a small screw and nut. The points can be cleaned by lightly polishing with smooth emery cloth. Lubricate the felt pad by working into it a small quantity of motor transmission grease. Do not use ordinary grease.

CONTACT POINTS—LUCAS GENERATOR

Models having a Lucas generator can be identified by the letter "L" included in the engine number prefix.

In this case it is not necessary to withdraw the flywheel to check and adjust the points. An opening is provided in the face of the flywheel for this purpose.

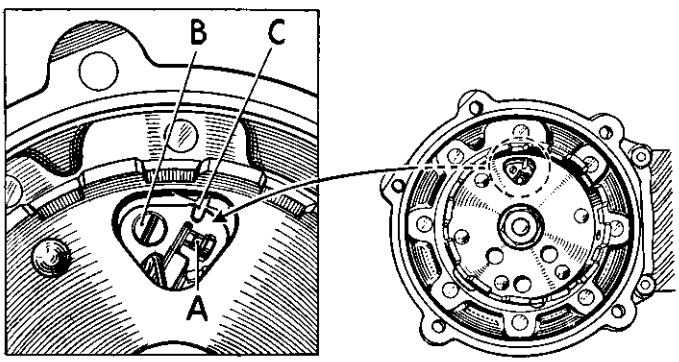

Fig. Z4. Adjusting the Contact Breaker Points (Lucas).

Rotate the flywheel until the opening is in line with the contact-breaker and the points are fully open. Slacken the fixing screw "B," Fig. Z4, place the end of the screwdriver in the slot "C" and move the plate as necessary to obtain the correct points gap of .014"—.016". Re-tighten the fixing screw.

To remove the points assembly, the flywheel must be drawn off as already described. Take out the fixing screw and remove the nut from the terminal post, noting the positions of the various washers. Carefully prise off the return spring and lift off the two wires. The points assembly can then be removed. Very fine emery cloth may be used to clean the points.

The felt pad should be removed or re-impregnated with clean engine oil. Lubricate the contact lever pivot with a spot of engine oil.

Note.—Before re-fitting the flywheel, make sure that no metallic particles have been attracted on to the magneto. Always use Service Tool No. 61-3536 to avoid placing any strain on the con-rod assembly. Fit a new locking washer under the nut.

TO CHECK IGNITION TIMING

Remove the sparking plug and turn the engine in an anti-clockwise direction (looking at the generator side) until the piston is at the top of its stroke. Then turn back until the piston has moved 5/32in. from T.D.C. In this position the cam on the mainshaft should be just commencing to lift the contact-breaker rocker arm "C," Fig. Z3 or "B," Fig. Z5, and the points should be not more than .002in. apart. If they are open more than this, the timing is too far advanced. If they are open less, the timing is retarded.

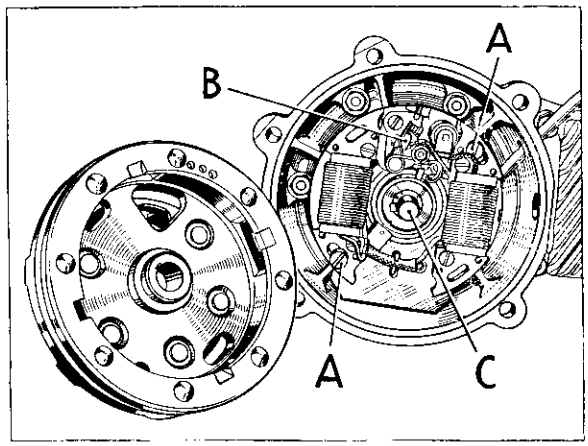

Fig. Z5. Generator (Lucas).

The cam itself is keyed to the mainshaft, but a small adjustment can be made to the timing by slackening the two screws "A," Figs. Z3 or Z5, and moving the stator assembly either way as necessary. After re-timing, tighten the screws firmly.

COMPLETE DISMANTLING OF THE ENGINE

Take out the two screws "A," Figs. Z3 or Z5, and withdraw the stator assembly, pulling the two leads through the rubber grommet in the housing. Prise off the contact-breaker cam and lever the key out of the shaft with a small screwdriver or similar tool.

Remove the swinging arm blade, cylinder head and cylinder barrel as described in Service Sheet No. 902. The gudgeon pin is secured in the piston by means of circlips. Take out one of these with a pair of thin-nosed pliers, warm the piston by applying a cloth soaked in hot water and press out the gudgeon pin. Support the piston firmly during this operation to avoid straining the con-rod.

Now unscrew the five crankcase stud nuts from inside the generator housing, and also the two nuts at the base of the cylinder. The outer crankcase half can then be drawn away. As the crankpin is of the overhung type, both main bearings are contained in the inner half of the crankcase. Press the mainshaft assembly out of these bearings. Note that the crankpin is not detachable; should it be be necessary to renew the big-end bearing, a complete new mainshaft assembly must be used.

An oil seal is located behind the contact-breaker cam. This can be prised out of the housing after the small ring has been removed from its centre. Both main bearings must be extracted from the right-hand side of the housing by means of a suitable drift or puller. The smaller bearing is retained by a spring ring. Heat the crankcase in hot water before attempting to remove or replace the bearings.

RE-ASSEMBLING THE ENGINE

Re-assembly is carried out in the reverse order to dismantling; using a new oil seal on the engine mainshaft.

Inspect the piston and rings; discoloured patches on the outer surfaces of the rings indicate a leakage of gas from the combustion chamber and the rings should be renewed. The skirt of the piston should present a dull, even surface. High spots will show up as small bright patches, and these may be very slightly eased with a very fine file. Heavy scores denote a partial seizure, possibly caused by insufficient lubrication, a too weak fuel mixture or retarded ignition, any of which would result in overheating. Fit a new piston after the cause of the trouble has been investigated and cured. Check that the rings are a close fit in the grooves; there should be no noticeable side play. The ring gaps should be not more than .013in., or less than .009in. To measure the gaps accurately, place each ring squarely in the cylinder bore, preferably near the base where the least wear takes place.

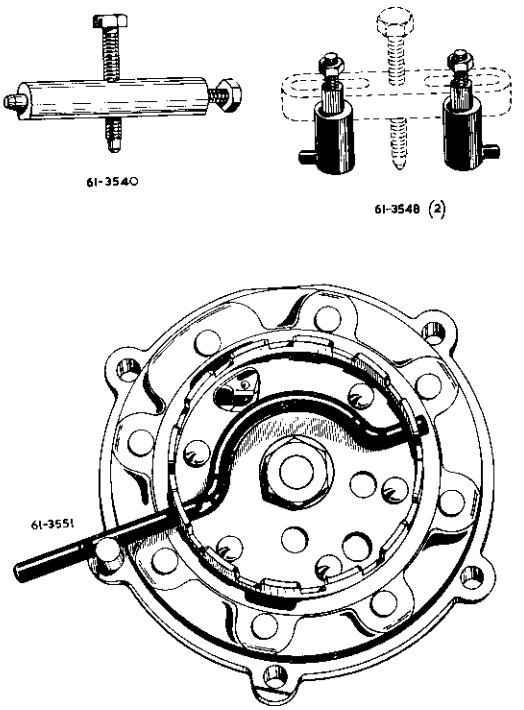

Fig. Z6. Flywheel Removal Tools.

The crown of the piston is marked "EXHAUST" on one side. This side must be next to the exhaust port in the cylinder; that is, on the right-hand side of the engine. Failure to observe this precaution may result in the ends of the rings becoming trapped in the cylinder ports.

Do not forget to adjust the contact points gap before replacing the flywheel on a Wico generator.

A useful tool for turning up the locking washer on to the flywheel nut consists of a substantial flat bar which has the end bent at right-angles and ground to a wedge shape. Rest the wedge behind the washer and strike the flat of the bar with a hammer.

When the re-assembly is completed, replace the engine in the frame and securely tighten all nuts and screws. It will be noticed that the carburetter is a push fit into a plastic sleeve in the crankcase. Two rubber rings in grooves on the carburetter spigot provide a seal. These may require renewing occasionally to ensure an air-tight joint.

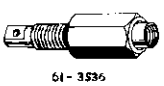

Fig. Z7. Flywheel Assembly Tool.

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