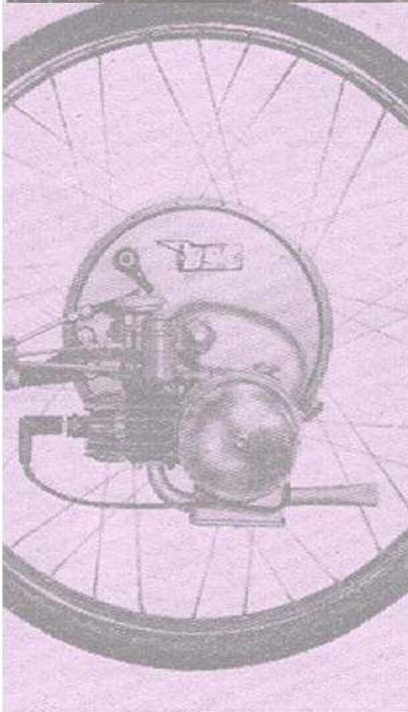


IceniCAM Information Service



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SERVICE INSTRUCTIONS

FOR THE **WIPAC** SERIES 73 MK I

FLYWHEEL IGNITION GENERATOR

RUNNING MAINTENANCE

The magneto requires very little maintenance and if the following notes are observed the life of the machine should prove trouble free.

Check and if necessary re-adjust the contacts once every 5,000 miles. (See Service Instructions.)

Occasionally clean the contacts by inserting a dry smooth piece of paper between them and withdrawing while the contacts are in the closed position. Do not allow the engine to run with oil or petrol on the contacts or they will start to burn and blacken, and if they do, lightly polish with a piece of smooth emery cloth.

After every 5,000 miles it is necessary to re-lubricate the cam oil pad. This is done by removing the pad and

squeezing and working into it a Summer grade of motor transmission grease which will very closely resemble that used at the factory. Do not use ordinary grease.

Do not run with a faulty or damaged high-tension lead and occasionally clean away mud and dirt from around the H.T. insulator.

If the magneto requires any attention beyond the replacement of contact points and condenser, it is recommended that the complete machine should be sent to us or to an authorised Wico service station. The following information is given for the benefit of those unable to do so:—

GENERAL MAINTENANCE

Checking the Magneto for spark

If the engine fails to start and there is an indication of the magneto causing trouble, the spark can be checked by holding one of the H.T. leads $\frac{3}{16}$ " away from a point on the frame. When the engine is kicked over in the usual way, a spark should jump this gap. If no spark is visible, see that the H.T. leads are in good condition and that the fixing of the leads in the distributor block is secure, and examine the contact breaker. Make sure there are no metallic particles inside the housing and that the contacts are perfectly clean, and the contact breaker gap is correct to the recommended setting. If the contacts are found to be in a burnt or badly pitted condition, a faulty condenser is indicated. If the contact breaker appears to be in order, the stator plate may be removed from the engines complete with coils. To do this, the cam and distributor rotor should first be withdrawn by unscrewing the large headed retaining screw, then the three stator plate securing screws removed, allowing the stator plate assembly to be withdrawn clear of the engine casting. Should it be necessary to completely remove the stator plate entirely, the low and high tension leads should be freed from the distributor moulding and the plugs respectively, the former by the loosening off of the grub screws and drawing the low tension leads which are coloured through the rubber insulator. The stator plate assembly should then be entirely free of the engine.

The leads of the ignition coil should be examined to ensure that there is no break in the wiring. One lead will be found to be joined to a tab which is clamped underneath one of the nuts which anchor the stator to the stator housing. If this is in order, check the other end of the primary ignition coil which is connected to the condenser terminal.

The screw which locks the insulated post in position will be found underneath the low tension coil on the right-hand side looking at the inside of the stator housing when in its upright position. There is, how-

ever, no need to remove this screw for any of the investigations recommended in these instructions.

The condenser lead is held by a screw on the front of the insulated post. If the primary live lead is secured firmly to the condenser terminal and the condenser lead also secured to the front of the insulated terminal post, and both tags are not earthing in any way, the ignition coil should be in working order.

In the unlikely event of the H.T. insulation of the secondary coil breaking down, provided this is not internal, it should be possible to detect signs of charring on the binding tape of the coil. If absence of spark is due to tracking, track burns may be visible on the distributor moulding.

Replacement of Coil

The removal of the stator coil assembly is effected by first unsoldering the ignition lead from the coil, then freeing the white, red and green low tension leads from the distributor block moulding and unscrewing the two clamp nuts. The live lead of the primary ignition coil must then be disconnected from the condenser by the removal of the condenser nut. The stator coil assembly may then be gently eased off the two stator plate studs.

In order to slide the coil from the iron limb, it is necessary to straighten the small brass tab which will be found on the side of the coil which faces the stator housing. If the coil is grasped firmly in one hand with the fingers under the insulator gasket and on either side of the core, it may be quite easily pulled off.

To refit the ignition coil proceed as follows:—

- (a) Hold the coil in the left hand with the brass contact pointing away from the line of vision and the lead wires projecting downwards from the underside, and drop the leads through the rectangular hole in the insulating gasket, the extended end of which must point in the same direction as the coil tab.
- (b) With the other hand, push the coil core through the coil making sure that the brass locking tab rivetted to the iron is on the same side as the coil

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contact. Drive the fibre wedge provided, in between the core and the coil on the same side as the locking tab and bend over the tab.

- (c) Connect up the sleeved lead to the condenser via hole No. 5 in the distributor moulding, and firmly tighten up the condenser nut.
- (d) Screw down the stator assembly anchoring the ignition coil earth lead under one of the clamp nuts.
- (e) Make sure that all tabs are clean and all clamped connections are tight, and before lowering the stator see that none of the coil leads become clamped in between the stator and the housing.

IMPORTANT: Bend all stray loops of wire to behind the radius of the stator and screw down the condenser lead to the insulated post so that the lead passes under the contact breaker return spring to ensure that it does not foul the rim of the distributor rotor. Other wires in the near vicinity of the distributor rotor of flywheel rotor should always be pushed back clear to prevent any fouling.

Removal of Condenser

To replace the condenser, remove condenser nut and free the condenser and primary coil leads. Unscrew condenser fixing screw and withdraw the condenser.

When replacing, make sure that leads to the condenser are clear of the flywheel rotor and that the condenser itself is clear of the distributor rotor.

Adjustment and replacement of Breaker Points

The only adjustable part of the magneto is the breaker plate which provides for the setting of the breaker points. To set these points proceed as follows:—

Turn the engine over until the breaker points are fully open and insert the feeler gauge. Slacken off the locking screw which is to be found immediately above the points and if the gauge is tight, adjust the fixed contact plate, by means of a suitable screwdriver engaged in the recess provided, in an anti-clockwise direction until the correct setting of 0.015" is obtained. Tighten up the adjusting screw.

The breaker point setting should only be adjusted in the manner described and at no time should the fixed contact platform be bent to provide adjustment.

The moving contact is integral with the breaker arm. If the points need replacement it is recommended that both fixed and moving points be replaced at the same time.

When assembling the moulded breaker arm to the magneto, it is necessary to lightly prime the pivot pin with oil or soft grease, and an occasional priming throughout its life will be found to be advantageous. Care must be taken to put in the correct number of thin spacing washers behind the breaker arm, in order to bring the contacts in line with one another. The end of the contact breaker spring is then anchored to the terminal post with a screw and shakeproof washer. Care should be taken to see that the condenser lead is secured by the same screw. Place one of the spacing washers over the pivot on the outer side of the breaker arm and insert the spring clip in its groove.

The Low Tension Coils

These coils are robust in character and are most unlikely to develop faults.

In the event of a fault developing in the coil group, the removal, more so than the replacement, of the coil

or coils may not be an easy operation, and it is likely that further damage to the windings will occur during the removal process. It is advisable, before any steps are taken to remove the low tension coils, that the coils be thoroughly checked and proved without doubt to be at fault. The coils are secured to the iron core by means of a varnish adherent assisted by a fibre wedge. Paper formers are used, so damage to the winding can occur when being taken off.

In view of this, it is strongly recommended that should a fault occur in the low tension coil group, that application be made for a coil group replacement already secured to the iron core.

The ignition coil can be removed from the stator assembly as previously described and replaced on the new stator core and coil group replacement.

Having completed the stator coil assembly proceed as follows when building up the complete stator.

Care should be taken to see that the wire connections face toward the front of the machine when assembling the starter coil assembly into the housing. Connect up the low tension leads to the distributor block securing the leads to the grub screw terminals as follows. The white lead to terminal No. 2, the green lead to terminal No. 4, and the red lead to terminal No. 3.

Tighten down the two stator assembly securing nuts, but before doing so, see that the earth lead tab of the ignition coil primary winding is placed over the stator stud on the left, looking on the inside of the stator, and that the live ignition coil primary lead is taken back to the condenser. All nuts should be firmly tightened down. Any wire loops or wires that could come into contact with either the flywheel rotor or distributor rotor should be pushed back clear to prevent any fouling or electrical breakdown.

Finally, when connecting the low tension leads of the frame wiring to the magneto generator, make sure that the white, red and green leads are placed on the machine terminals already carrying that colour of lead.

This is part of a colour coding scheme, the complete scheme of which is given with the wiring diagram.

The Flywheel

The robust construction of the flywheel reduces the possibility of any faults on this unit to a minimum. The three powerful magnet inserts are cast in the rim of the wheel and it is not possible to demagnetise them by ordinary usage. No keepers are necessary when magneto housing and stator are removed. The boss of the flywheel is located on the crankshaft by a keyed taper and locked by a nut and shakeproof washer. It is unnecessary to remove the flywheel unless at any time the engine has to be dismantled. A thread cut on the outside of the flywheel boss enables the wheel to be removed by use of a special extractor. When replacing, the flywheel must be perfectly clean inside and outside.

Running Instructions (See Excelsior Handbook)

Instructions as to care and the disconnecting of the generator input to the rectifier if the battery has been removed apply equally well with the Wipac Unit. We, however, specify an alternative to disconnecting the generator supply, if so desired. If the battery is removed, connect the negative and Positive leads together forming a short circuit on the rectifier. The short circuit current of the generator is controlled, the maximum being very close to maximum full load current.