



## Lucas RM15 & Later Alternator - Check Your Air Gap

Your new Lucas alternator parts (stator and/or rotor) are high precision items that require an expert level of knowledge to fit correctly. Follow the workshop manual for the specific machine for installation instructions and torque settings. It is the responsibility of the person doing the work to obtain this information as it is not included in the parts purchase price. It is mandatory that all securing devices must be in place and in good condition, single use locking devices such as tab washers MUST be renewed.

**Failure to install Lucas rotors and/or stators correctly can result cause injury, death or damage to your new alternator that will not be covered under warranty.**

Once correctly fitted and torqued you must rotate the engine 360 degrees and check at clearance between the magnetic rotor and each stator pole face in turn. Note that single phase stators have 6 pole faces and 3-phase stators have 9. Check for a minimum of 0.2mm (0.008") clearance at each pole face. A clearance of between 0.2 to 0.25mm (0.008 to 0.010") is normal. We recommend the use of non magnetic stainless steel, brass or plastic feeler gauges.

*The 0.2mm (0.008") clearance is the minimum allowable clearance. If the rotor has less, it is possible for the crank to flex enough during normal operation for the rotor to rub the stator. Failures related to the rotor rubbing on the stator are the fault of the installer and will void your warranty. The heat generated by even a small area of rubbing can melt insulation on the stator and damage the rotor. In the most severe cases the heat generated can melt the rotor and seize the engine causing damage to other parts of the machine or cause injury or death to the rider or those nearby.*

The new Lucas stators and rotors are made on modern machinery to standards of accuracy that the original company could only dream of, and are never found to be inaccurate. If the rotor clearance is found to be incorrect this can be caused by many factors, however machining of the rotor must never be considered a remedy to a clearance issue. It is not uncommon in an accident if the front of the primary cover is hit to find the impact has bent both of the two front stator studs. Depending upon the force of impact the stator studs can drive the stator against the rotor and bend the crankshaft. It is also fairly common to find a bent main shaft. Common reasons for not being able to obtain the minimum clearance include:

Excessive clearance in the crank shaft bearings.

Stators mounted on misaligned or bent studs.

Bent main or crank shaft.

Loose or misaligned inner primary covers, non-unit Triumphs, BSA and Nortons.

Rotors mounted on worn crankshaft keyways.

Such defects are easily missed if you do not check fully between each and every pole faces while rotating the engine through 360 degrees. In some positions the rotor may appear to have the 0.008" clearance but when you rotate the motor 180 degrees the required clearance may close up or disappear all together. You will have to have such defects repaired by an experienced engineer.

**On some Triumph Tiger Cubs** reducers are required to adapt down the stator holes from 5/16 to 1/4 inch. Due to the stator being mounted on the primary case cover the procedure for checking the rotor clearance is a little different. Wrap the rotor once with masking tape then install the primary cover and mounted stator. Tighten the cover screws and gently kick the bike over a few times. Remove the primary cover and inspect the tape for any rub marks. If there are marks adjust the stator mounting and renew the rotor masking tape. Perform the test again till you do not get any marks on the tape.

All automotive parts supplied by Powder Mill Electronics Ltd are supplied on the basis that fitting requires background knowledge, experience, specialist tools, equipment and training. All parts must be fitted by a qualified and experienced mechanic working with access to the OEM shop manual and working to industry accepted standards. If you feel you do not have the right skills, knowledge or tools consider getting help from someone who does - mistakes are often expensive to rectify.