

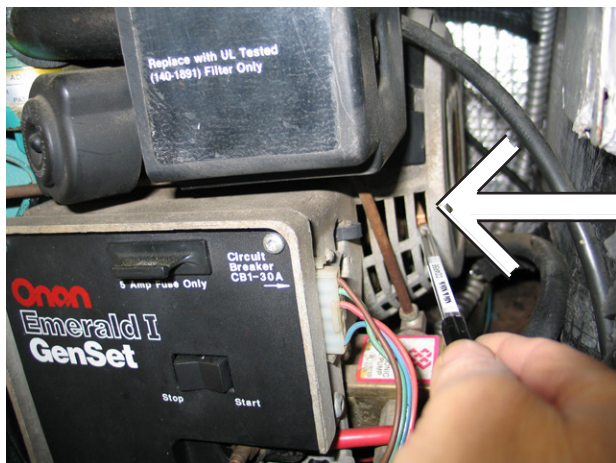
Clean & re-finish generator slip rings quickly & safely with the unique



It's a product no RV Generator Service Tool Kit should be without!



THE PROBLEM: Over a period of time, generator slip rings become tarnished, oxidized and coated with dirt and carbon. This contamination build-up results in poor contact between the brushes and the slip rings. The voltage regulator attempts to maintain a constant output voltage by supplying enough field (rotor) current to support the load. When the field circuit resistance is high due to dirty slip rings, the regulator must supply a higher voltage in order to obtain the same field current. This causes the regulator to work harder, run hotter and possibly fail prematurely. In addition, the increased resistance causes the slip rings to run hotter than normal, further aggravating the tarnish and oxidation problem. The answer is to keep the slip rings clean. Up until now, this could be a labor-intensive task, often requiring at least the removal of the brush(s) and brush holder(s) to gain access to the slip rings.



THE SOLUTION: The *Slick Stick* service tool is designed to clean and re-finish generator slip rings quickly and safely with the generator running and *without* any disassembly. The *Slick Stick*, made of durable and insulating acrylic plastic, is thin enough so that it can be passed through the cooling slots on the rear of the generator. (See photo @ Left) Then, one of the two precision aluminum oxide stones on the end of the tool is gently brought into contact with each of the slip rings. The coarse stone is used for cleaning and re-surfacing severely contaminated or worn rings. The fine stone is used for polishing the surface to a smooth finish. Both long-lasting stones are easily cleaned with detergent and water. The *Slick Stick* is 14 inches long and has a non-slip vinyl handle.

The *Slick Stick* saves time and money by getting the job done faster. This valuable service can be performed in just a couple of minutes and can go a long way to help prevent premature regulator failure. No generator service tool kit should be without one. Order yours today!

Part No. 56-A360-09

The Slick Stick is part of our extensive line of Generator Service Tools and Replacement Controls. To see them all, visit www.flightsystems.com

Exclusively From:



FLIGHT SYSTEMS

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Mechanicsburg, PA 17050**

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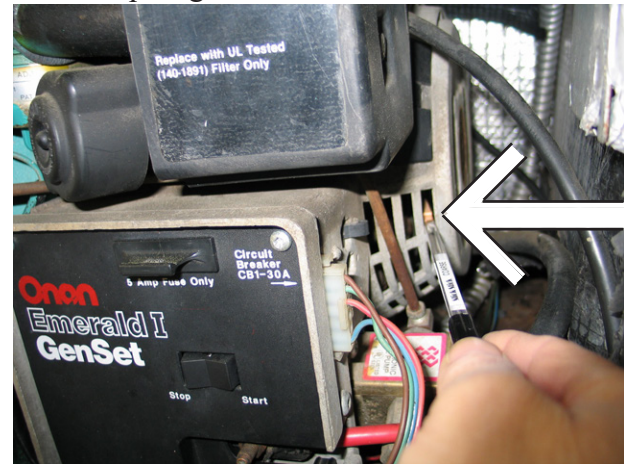
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**"Designing & Rebuilding
Generator Controls since 1978"**

Instructions for use of the Slick Stick



1. If possible, measure the field (rotor) resistance before and after cleaning the slip rings. This will give you an indication of how dirty they are and if there are any remaining problems after cleaning. On most Onan models, measure 22-25 ohms between pins 9 and 10 of the regulator plug (Flight Systems G-MAN and Point-MAN Service Tools makes this easy). Refer to the appropriate OEM service manual for exact field resistance values for your model.
2. Turn off the generator's circuit breaker as a precaution to protect the external circuit from any voltage transients that could be produced during the cleaning process.
3. Clear the area in the vicinity of the rear of the generator by moving wires, etc. out of the way so that there is clear access to the end bell cooling slots.
4. Make sure that the lighting in the work area is adequate to clearly see the slip rings. Don't try to work in the dark as damage to the tool and generator could result. The tool is made of non-conducting materials so there is no shorting or electrical shock hazard.
5. If the slip rings are severely worn or contaminated, start with the COARSE (180 grit) stone. When polishing or removing a light tarnish, use only the FINE (320 grit) stone.
6. Use the rearmost slot for access to the rear slip ring and the next slot forward for the forward slip ring. A slight angle is necessary because the cooling slots do not line up exactly with the slip rings.
7. Start the engine and allow the speed to stabilize.
8. Carefully insert the tool through the rear cooling slot until the proper stone is positioned directly below the rear slip ring. (Rt.) **CAUTION:** DO NOT allow the end of the tool to contact any part of the rotor except the slip ring being cleaned. Bring the stone into contact with the slip ring and apply a slight upward pressure. Move the stone from side to side across the slip ring until wear patterns and contamination are removed. If the COARSE stone was used, turn the tool over and repeat the procedure with the FINE stone until the slip ring is polished.
9. Repeat the above procedure for the forward slip ring using the next forward cooling slot for access. Turn the circuit breaker back on after slip ring cleaning is completed.
10. TIP: While cleaning the slip rings, move the tool in or out periodically to avoid a heavy buildup of metal or contaminants in one spot on the stone. After use, the stones may be cleaned with detergent and water and a stiff bristle brush. Mineral spirits, petroleum-based parts cleaning fluid or isopropyl alcohol may also be used but do not soak. Avoid strong solvents such as toluene, lacquer thinner (acetone), MEK (methyl ethyl ketone), methylene chloride or TCE (trichloroethylene).



WARNING: Extreme caution must be observed when using the Slick Stick on *vertically mounted generators*. Use of excessive pressure may cause stick to break, resulting in pieces dropping into spinning rotor, possibly causing damage to windings and personal injury. Flight Systems is not responsible for injuries or damage to generator caused by improper use of our products.

Designed
& Built in
USA by:



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