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RIM Tach 8500
Shaft Grounding Brush
Accessory
Installation & Maintenance

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Introduction – Shaft Grounding Brush



- Used in conjunction with RIM Tach 8500 digital tachometers.
- Provides a low resistance, electrical contact to the motor shaft to reduce or eliminate induced shaft currents in AC & DC motors.



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Why use a Shaft Grounding Brush?

- Induced shaft currents are a major cause of premature bearing failures in large motors.
- Bearing currents and the resulting failure in electric motors occurs when variable frequency drives (VFD's) are used to control AC motors.
- These currents discharge through the motor bearings causing pitting & fluting. This damage ultimately causes premature bearing wear and failure.

Current Fluting Damage



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Operation

- The RIM Tach Shaft Grounding Brush kit effectively discharges bearing currents to the frame and ground.
- The kit consists of a steel shaft extension that screws into the pulse wheel located at the end of the motor shaft.
- The shaft extension provides a point of contact for the carbon brush
- The carbon brush holder mounts in the cover plate.



Figure 3: Components of RIM Tach[®] Shaft Grounding Brush Assembly (end-of-shaft)



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Component Description

- The RIM Tach Shaft Grounding Brush Kits consists of:
 - Steel shaft extension
 - Protective brass cap
 - Carbon brush holder
 - Carbon brush
 - 3/4" jam nut & toothed washer
 - (4) Cap screws and washers
 - Cover plate
 - End-of-shaft style
 - Thru-shaft style



Figure 3: Components of RIM Tach[®] Shaft Grounding Brush Assembly (end-of-shaft)



Shaft Extension Options

- Referring to Fig 1 of the instruction manual
 - There are different stainless steel shaft extensions available for various motor manufactures
 - General Electric 6000 Series, end-of-shaft models E01, E06, E08, E10 & 1.0”
 - Thru-shaft models SP1, SP2, SP3 & SP4 (common for Marathon & Reliance Motors)
- Consult application engineering for questions.

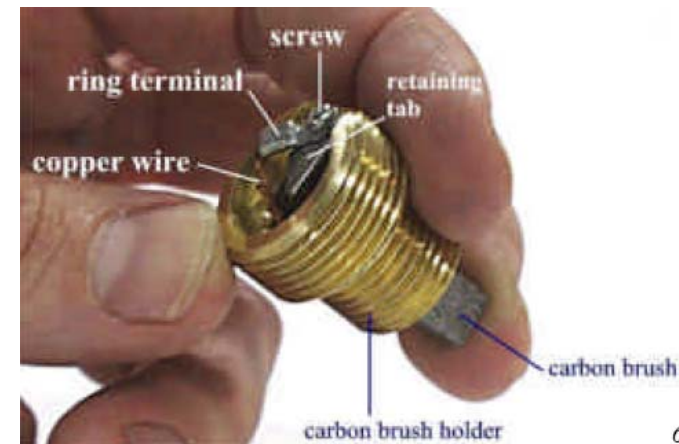
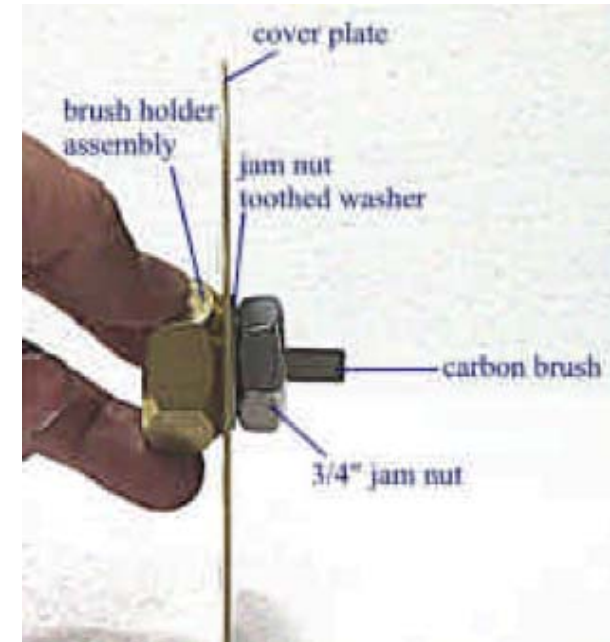


Figure 1: Steel Shaft Extensions for Various Motors



Shaft Grounding Brush Assemblies

- Holder/cover plate assembly consists of:
 - Brush Holder Assembly
 - Cover Plate
 - Jam nut & washer
- Brush holder assembly consists of:
 - Carbon brush holder
 - Carbon brush
 - Copper wire
 - Ring terminal
 - Retaining tab & screw



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Installation Procedure – Steps 1 & 2

- Step 1: Complete RIM Tach 8500 Installation

- Follow the RIM Tach 8500 instruction manual to the point where the end cover is secured.

Step 2: Install Stainless Shaft Extension

- For Field retrofits - remove the standard RIM cover plate.
- Screw in the appropriate stainless steel shaft extension into the center hole, located at the center of the tachometer pulse wheel.



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Installation Procedure – Step 3

- Step 3a: Install Holder/Cover Plate Assembly

- Hold the holder/cover plate assembly by the protective brass cap
- Place the assembly into the front recess of the RIM Tach 8500 housing and align the four holes of the cover with the threaded holes of the housing

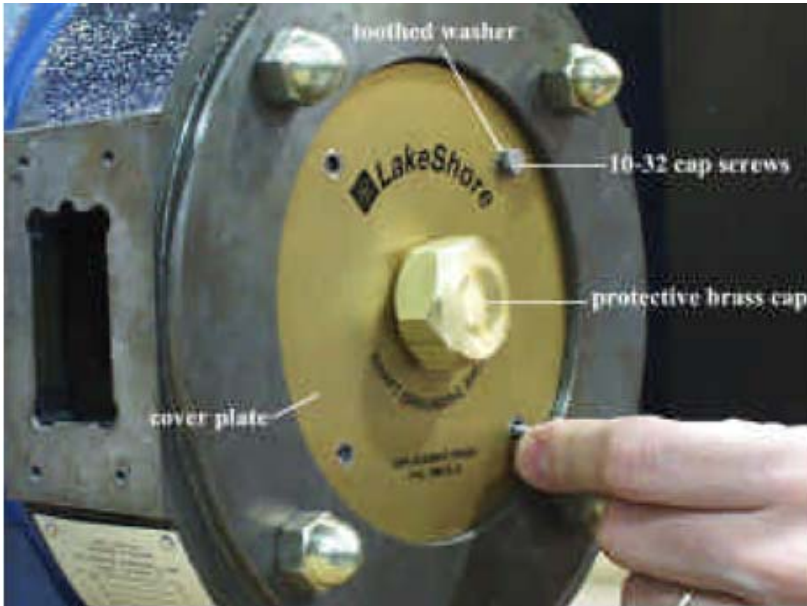


You should feel the carbon brush contact the steel shaft extension.

- Secure the cover plate with the (4) 10-32 cap screws, using the (4) toothed washers between the cover plate and cap screws.



The toothed washers ensure a good electrical contact between the carbon brush holder and the tachometer enclosure.



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Installation Procedure – Step 3 continued

- Step 3b: Thru-Shaft Applications

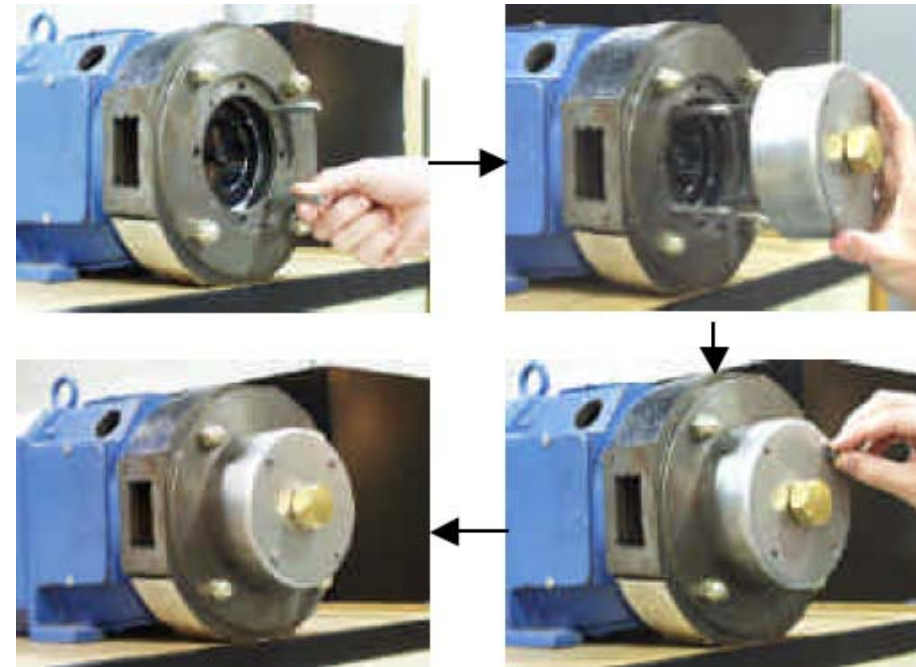
- Place the (4) standoffs (elongated screws) into the RIM Tach 8500 tachometer enclosure.
- Align the four holes of the thru-shaft cover over the standoffs
- Slide the cover over the standoffs
- Place the (4) 10-32 cap screws into the ends of the standoffs to secure the cover



Be sure to place the toothed washers between the cap screws and the end of the standoffs.



New tachometers purchased with the shaft grounding brush will have the holder/ cover plate assembly already installed.



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Completed Assembly



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