

Tuff Tread

502 W. Montgomery STE 120
Willis, TX 77378
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www.TuffTread.com

Motor Brush Holder Assembly

Installation Instructions

Never use a sanding stone or comm stone on the commutator of a Noramco Fitness Treadmill motor. The commutator of a motor that has been properly broken in has a fairly thick layer of graphite build up on it. It should be completely black to provide the proper “slip” for the brushes.

Make sure that the treadmill is unplugged before beginning this procedure.

Follow these steps to install your motor brush holder.

You will need the following tools:

- Flat-Head Screwdriver or ¼” Nut Driver
- Ratchet with ½” Socket
- Rubber Mallet
- Gloves
- Safety Glasses

The machine must be unplugged from its power source during this procedure!

Remove the old assembly:

Remove the red and black wires, coming from the motor, from the PWM (Motor Control Board). Make note of where you disconnect these wires. You will need to reattach them later!

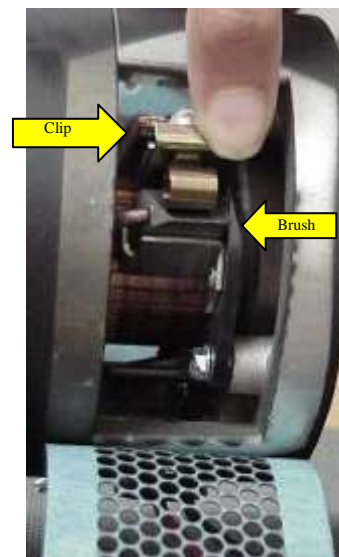
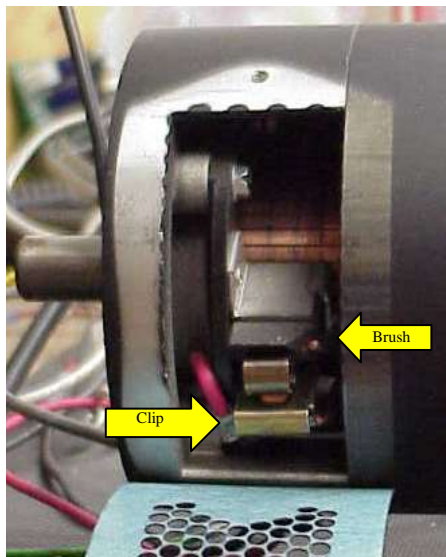
Locate the two motor vent flaps at the end of the motor and remove the upper screw with a flat-head screwdriver, or a ¼ - inch nut driver.

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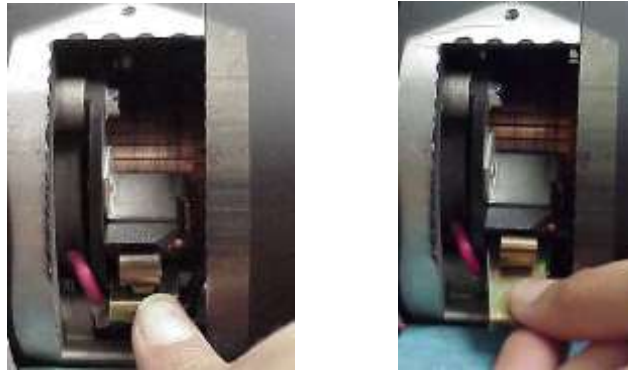
Locate the brush and the clip holding it in place. On one side of the motor, the clip will be under the brush, and on the other side it will be on top of the brush.



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Push the clip in and towards the brush to free the catch on the bottom. The clip will slide out.



Pull the brush out of the slot and leave it hanging by the side of the assembly. Repeat this step for the brush on the other side of the motor. Never perform this procedure with the brushes still in their holders.



Using a 1/2" socket, remove the two nuts from the rear side of the motor (opposite the fan). Save these, as you will need to use them to install the replacement assembly.

Gently wiggle the old motor brush holder assembly as you pull it off the rear motor shaft. There may be a thin metal spacer between the rear bearing and the motor brush holder assembly. If there is, do not lose it as you will need to use it with your replacement assembly.

Prep the replacement assembly:

Take the replacement assembly that came with these instructions and locate the two motor vent flaps at the end of the motor and remove the upper screw (opposite the red and black wires) with a flat-head screwdriver, or a 1/4 - inch nut driver. Remove the brushes from their holders. Let them hang free of the holder assembly.

If you found a thin metal spacer from between the rear motor bearing and the old assembly, place it inside the recessed center of the replacement assembly.

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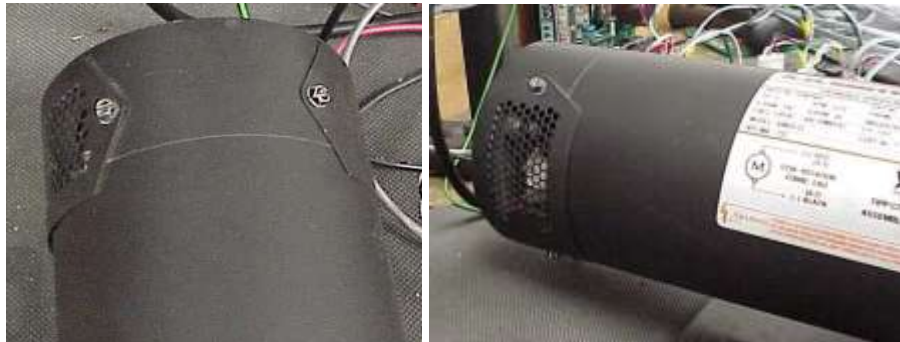
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Install the replacement assembly:

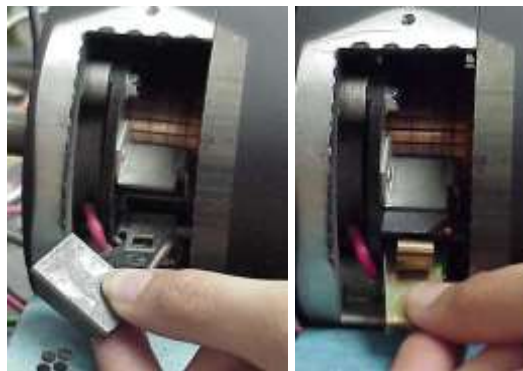
Position the replacement assembly (with the red and black wires facing down) onto the rear shaft of the motor. Gently wiggle the replacement assembly as you push it onto the rear motor shaft.

Using a 1/2" socket, tighten the nuts onto the rear of the motor housing. It is important not to cross-thread the nuts as you tighten them. Begin threading the nuts on with your finger, then switch to the ratchet, if needed.

The finished result should be a motor brush holder assembly joining with the rear of the motor case with an even seam all the way around. The assembly should fit very snug and close with a thin seam (see picture below). If this is not the case, loosen the nuts and gently wiggle the assembly until it is in the correct position and tighten the nuts back into place.



Place one of the brushes back into its slot and replace the clip that holds it in place. Repeat this step for the brush on the other side of the motor. The contour of the brush must match the contour of the motor, or the brush will not make proper contact with the commutator.



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Reattach the vent flaps at the end of the motor with the upper screw you removed earlier, using a flat-head screwdriver, or a 1/4 - inch nut driver.



Reattach the red and black wires, coming from the motor, to the PWM (Motor Control Board). They go on the top two blade connectors on the right hand side of the PWM. When you are done, the order of the wires on the right side of the board, from top to bottom, should be:

RED
BLACK
WHITE
BLACK

