



A Leader in Electric Motor Testing

Tip Of The Week

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Equidistant Brush Spacing

Brush spacing should be checked anytime arcing or slot bar marking is present and shifting of electrical neutral to the correct position does not correct the problem. Incorrect brush spacing results in one or more sets of brushes operating out of their neutral position at all times. Spacing requirements are critical to the degree that the total error allowed for the sum of all boxes should be located in your technical documentation. If you do not have documentation stating the total error allowed you should use 1/32 of an inch.

Verifying and Adjusting the Brush Spacing

1. Wrap a length of 2 to 4 inch adding machine paper around the commutator with 3 to 4 inches overlap. Ensure the paper is flush with either the inside or outside of the commutator depending which row(s) of brushes are being checked. While holding the paper tightly, mark the lower sheet of the overlapped portion with a pencil. Lay down the upper sheet of the overlap tightly and precisely trace the mark previously made on the lower sheet such that only one mark can be seen.
2. Remove the strip of paper from the commutator, lay it flat, and measure the distance between the marks to the nearest 1/64 inch.
3. Divide the measurement in step 2 by the total number of rows of brush boxes to the nearest 1/64 inch and mark the strip of paper at the exact point of measurement.
4. Place the paper around the commutator with the divisions showing and secure it so that each mark is as close as possible to the toe of a brush and the marks from step 1 overlap.
5. Going clockwise ensure that each set of brushes line up to the prescribed mark. If not, adjust the individual brush box or row of boxes depending upon design of brush rigging, so that the brush tow lines up with the mark. Ensure that the proper brush angle, box height, and the toe-to-toe alignment are maintained.

You are invited to submit an Electric Motor Testing Tip of your own and receive a free PdMA® mug or hat if we publish it! Contact Lou at 813-621-6463 ext. 126 or lou@pdma.com.

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