Tech Talk December 2011

Motor Testing Absorption Dynamometer

AC Motor set up for dyne test.

…..and here I quote from our website

"We have learned, over the years, that all DC motors need to be load tested on a dynamometer when the repair is completed. To leave off this important testing is not wise and can lead to false conclusions."

We say this because the sure fire way to prove that the shunt field windings, the commutating (interpole) windings and the armature winding are all connected properly is to load test the dc motor at or near full load to make sure that commutation is correct. If there are any problems we will see it with this test.

During the DC dyne test we will use brush seating stones to effectively contour or seat the brush face to the commutator to improve commutation, so that there is the absolute minimum of arcing at the brush face, thus ensuring the best life possible for the machine under test.

Sometimes we redesign AC motors for different horsepowers ,voltages and speeds and we use the dynamometer to confirm that say, at the new voltage the motor has the required running torque at the correct amperage for the design horsepower.

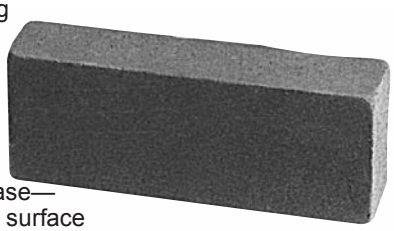
The dynamometer has a control box attached with a print-out showing the developed HP,Speed and Torque in lbs feet. The HP is calculated based on the simultaneous measurement of torque and rotational speed(rpm) using the formula:

$$\text{Torque (lb-ft.)} = \frac{\text{Horsepower} \times 5252}{\text{rpm}} \qquad \text{So, Horsepower} = \frac{\text{Torque} \times \text{rpm}}{5252}$$

In conclusion, then, the dynamometer is an essential piece of test equipment that allows us to load down an electric motor and see it's behavior under a load rather than a no load test, which yields valuable results but will not spot hidden problems that are revealed with a loaded test.

Holland Industrial, 518 West Montgomery Street, Henderson, NC., 27536
Tel: 1-800-232-7541,Fax 1-252-492-2444, E-Mail: sales @ hollandindustrial.com

Powr-Polish™ Flexible Abrasive



- Fine-grain, non-dusting abrasive held together by a flexible bond
- Serves as both commutator cleaner and burnisher
- Removes dirt and grease—imparts super-finished surface
- Non-conductive and non-loading

Sizes (Inches)	Cat. No.
3/8 x 1/2 x 5	**82-001**
3/8 x 3/4 x 5	**82-002**
5/8 x 1 x 5	**82-003**
1 x 2 x 5	**82-004**
1 x 4 x 5	**82-005**
1/8 x 1 x 5	**82-006**

Please allow 2-3 weeks for delivery.

Brush Seater and Commutator Cleaner

- Gentle acting abrasive for seating carbon brushes and cleaning commutators and slip rings
- Soft, loosely bound grain produces a scouring effect when held against commutator
- Will not remove or scratch copper
- Self-cleaning

Sizes (Inches)	Grades	Cat. No.
1/4 x 1/4 x 4-3/4	M, H	**23-001***
1/2 x 1/4 x 4-3/4	M, H	**23-002***
3/8 x 3/8 x 4-3/4	M, H	**23-003***
1/2 x 3/8 x 4-3/4	S, M, H	**23-004***
1/2 x 1/2 x 4-3/4	S, M, H	**23-005***
5/8 x 1/2 x 4-3/4	S, M, H	**23-006***
3/4 x 1/2 x 4-3/4	S, M, H	**23-007***
1-1/8 x 5/8 x 4-3/4	S, M, H	**23-008***
1/2 x 1 x 4-3/4	S, M, H	**23-027***
1 x 1 x 4-3/4	—	**23-035S**
2 x 1 x 4-3/4	—	**23-036S**
3 x 2 x 4	—	**23-039S**
3 x 2 x 6	—	**23-041S**
3 x 2 x 8	—	**23-042S**

*Add grade letter suffix to Cat. No.
Please allow 2-3 weeks for delivery.

Commutator Smoothie® Resurfacing Tool

- Designed to smooth commutators of auto generators, starting motors and other similar equipment
- 8-1/2 in. plastic handle with a 5/16 in. x 7/8 in. x 11/16 in. resurfacer on each end
- Features one polish-grade and one finish-grade resurfacer

Description	Cat. No.
Commutator Smoothie® Resurfacing Tool	**80-**

Please allow 2-3 weeks for