

B&B Benchmark

B&B ELECTRIC MOTOR CO. Wichita, Ks

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WHAT'S NEW AT B&B



MACHINE WORK

With the wide variety of machine work that we provide, it becomes very important to maintain the correct equipment.

B&B has 4 lathes (to accommodate varied sizes of motor armatures) 2 dynamic balancers (one in shop and one portable unit to balance on site) and one vertical mill.



WHO'S WHO AT B&B

Our employee "*in the spot light*" this issue is Doug McCall. Doug is one of our "seasoned" employees whose experience makes him a valuable asset to B&B. He has 38 years experience as a machinist and has been with us just over 6 years.

Doug is married with 5 grown children and 12 grand children. A golf fanatic, he also is an avid hunter and fisherman.

WHAT CAN WE DO FOR YOU?

Doug is a key component in our FULL SERVICE MOTOR SHOP pledge. With an experienced machinist we are able to provide the following services:

***TURN AND UNDERCUT ARMATURE:** The commutator surfaces can become burnt and scored from short brushes, contamination, and motor loading. The surface has to be machined concentric with the bearing surface, and the mica insulation between the commutator bars has to be removed to provide a good contact surface on the commutator for the new brushes.

CONTINUED ON PAGE TWO



**Reliable
Solutions
Today!**

TECHNICIAN'S CORNER

A CLOSER LOOK AT THE NO-LOAD CURRENT

Typically, motor currents of interest are the no-load current, full load current, service factor current, and starting (or inrush) current.

You will know the full load current from the nameplate, and you can calculate the starting current from the Code Letter on the nameplate. Service factor current may or may not be on the nameplate.

The no-load current will not be shown on the nameplate. It is possible to obtain the value from the manufacturer, but not always. The no-load current is an important benchmark, and once it is established, you can estimate the load on the motor at any time.

After any repairs have been made, it is always a good idea to test a running motor. Not every shop has a dynamometer to load test motors, so normally the motor is tested without a load to check for proper speed, temperature and no-load current.

The measured current can be a good indication that the motor is wound properly. Too low a no-load current can indicate that the winding is too weak.

If the no-load current is too high, there may be a number of problems, including core damage, broken rotor bars, an incorrect connection, or a winding that is so strong that it is saturating the core iron.

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WHAT CAN WE DO FOR YOU... continued

***REPAIR OF MOTOR SHAFTS:** This can include many things; metalizing, welding, milling keyways, cutting threads and machining shaft to the correct diameter. We have a unique semi automatic welding process to repair shaft and bearing surfaces. No other repair shop in the area can perform this type of repair. We can weld steel or stainless shafts. It is sometimes necessary, especially if the shaft is bent, to cut the end of the shaft off & stub a new shaft. This requires welding a new piece of material on to the cut shaft and then machining it to size.

***BALANCING:** The object of balancing is to eliminate the amount of vibration in a motor. This requires balancing all rotating parts. Our equipment measures the movement so that weight can be added or removed to the rotating parts, thus reducing the amount of vibration.

***BORE & SLEEVE ENDBELLS** Sometimes normal wear will cause the endbell to become too large for the bearing. A cast iron sleeve can be placed in the endbell and then bored to the correct diameter.



NO-LOAD CURRENT... continued

TOO LOW OR TOO HIGH?

But when it comes to no-load amps, how low is too low, and how high is too high?

There are some general rules for what percentage of the full load amps the no-load amps should be, but every design can vary and there are always exceptions to the rules.

For a typical three phase general purpose motor, the current without a load will normally be between 25 and 40 percent of the full load current.

But you may wonder where the current comes from. The no-load current consists of two components. First, the magnetizing component, or magnetizing current, is the current necessary to produce the rotating magnetic field, the bigger the air gap, the higher the magnetizing current.

The second component of the no-load current comes from the losses produced in the rotating parts, mainly friction and windage losses.



The current at no-load largely depends on the flux in the air gap. As the flux is increased, so is the no-load current as a percentage of the full load current.

The flux in a 2-pole motor is concentrated more in the back iron rather than in the air gap, so typically the no-load current is fairly low, maybe 1/3 of full load current, or less. As the number of poles is increased, the flux concentration in the air gap gets higher.

As a result, the no-load current of a slower speed motor is a higher percentage of the full load current.

An 8- or 10-pole motor can easily have the no-load current that is half of the rated current, or more.

For very slow speed motors, the no-load amps can be nearly the value of the full

load current. There have even been a few cases where the no-load current is higher than the nameplate value, and drops down when the motor is loaded. That situation is very rare, but we have had confirmation from at least one manufacturer.

When you are test running a motor, keep in mind that there can be a wide variation of no-load amps from motor to motor.

But if you know the general range of values, then you can make an accurate assessment of what the level will be for a given motor.

Once the benchmark has been established and noted, the value can be used to estimate the load level on the motor when it is in service.

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**B&B ELECTRIC
MOTOR CO.**

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Please send your request along with your e-mail address to:

bbemc@msn.com



OCTOBER 2003

**WE HAVE A THIRD
GENERATION GIESEN!**



CANAAN JAMES GIESEN

Proud parents Ed and Kim Giesen celebrated the birth of their first child Canaan. He was born on 8/15/03 and weighed 8lb 6oz. Although this is their first child, they are expecting to finalize adoption of their 2nd son, Nik, before the end of the year. Ed has been a technician for B&B since 1997, and is the son of our owner Bob Giesen. (This is Bob's 1st grandson!)

**CONGRADULATIONS TO
OUR NEW DAD AND
GRANDPA!!!**

B&B ELECTRIC MOTOR CO.

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WICHITA, KS 67211



Mission Statement

B&B ELECTRIC MOTOR CO. is committed to the high standards established by the Electrical Apparatus Service Association. Our pledge is to maintain these standards, and to provide the quality workmanship and service to our customers which has earned us an excellent reputation in over thirty-four years of business. We continually provide the newest technology and quality products to meet the needs of our customers. Our staff of dedicated professionals provides the best quality workmanship and service, and are the cornerstone of our business.