

Product Highlights

The Kings Mountain plant has many uniquely capable processes, most notably:



- ◆ The aluminum rotor die casting process takes extra measures to vent all air from the casting as it is poured. This is to eliminate porosity and prevent vibration in the rotor/shaft assembly.
- ◆ Our "Floating Cage" copper rotor bar design and precision brazing process, allow for thermal expansion as the motor starts up and operates under load. This eliminates the potential for rotor warping and rotor bar breakage and it also reduces axial vibration.
- ◆ After the stator laminations are punched, random samples are tested for geometric consistency within each slot and between slots.
- ◆ Standard production of machined components such as sleeve bearings, end brackets, frames and inner bearing caps, are checked on the Kings Mountain Coordinate Measuring Machine (CMM). Here the CMM machine measures the physical size and position on three dimensional coordinates.
- ◆ In the Kings Mountain automatic stator winding cell, all key processes are computer controlled to the engineer's specifications. For example, the coil winder maintains constant tension as the coil diameter builds. And robotically applying tape to the wound core, yields perfect insulating tape coverage and overlap that is consistent from one coil to the next.
- ◆ Vacuum Pressure Impregnation (VPI) is a multi stage process undertaken to ensure each medium voltage stator is adequately insulated. Once in the tank, the wound stator is subjected to a vacuum that pulls all air out of the tape and windings. Varnish is introduced and also subjected to a vacuum so all air and voids are removed from the varnish. Then pressure is applied so that all voids in the tape and magnet wire are completely filled.
- ◆ After the vacuum pressure impregnation (VPI) varnish process, the completed stator is positioned horizontally and rotated during the baking process. This ensures thorough penetration and utilization of the varnish.
- ◆ Before being mounted onto sleeve bearing motors, the rotor/shaft assembly is tested for shaft run-out. Here precise measurements are taken to make certain that mechanical and electrical tolerances are met.

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**KINGS
MOUNTAIN, NC PLANT**

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2/10 PROG 25,000

- ◆ Above NEMA AC Motors, 250-3500 Hp
- ◆ Large DC Motors 75-4000 Hp
- ◆ AC and DC Mining Motors 1-2000 Hp
- ◆ Hermetic HVAC Motors 200-1500 Hp



101 Reliance Road
Kings Mountain, NC 28086

Size: 245,000 sq ft

Employees: 485

Kings Mountain Products:

- ◆ Above NEMA AC induction motors 250-3500 Hp
- ◆ Large DC motors 75-4000 Hp
- ◆ AC and DC air or water cooled mining motors 1-2000 Hp
- ◆ Hermetic HVAC motors 200-1500 Hp

Kings Mountain Product Applications:

- ◆ Pump, fan and compressors (centrifugal and reciprocal)
- ◆ Underground and surface coal mining machinery and conveyors
- ◆ Aggregate mining machinery and conveyors
- ◆ Rolling Mills
- ◆ Test stands

Kings Mountain Served Markets:

- ◆ Petroleum
- ◆ Pulp & Paper
- ◆ Chemical
- ◆ HVAC
- ◆ Mining
- ◆ Rubber

The Kings Mountain plant began motor production in 1983. This operation was ISO 9001 certified on 1992 and was re-certified for ISO 9001/2000 in 2003. Focusing on both general purpose and critical service applications, Baldor•Reliance motors produced here are a big part of why Baldor is the most preferred supplier of industrial motors in North America. Additionally, these same Baldor•Reliance motors are the most frequently specified motors in the petro-chemical industry.



Safety and quality lead the list of priorities for every Kings Mountain employee.



They take pride in having worked over 7.5 million hours since the last lost time accident.

The first Lean event at Kings Mountain was conducted on January of 2001. Since then, this operation has experienced over 200 Kaizen events involving approximately 600 participants. Today 128 areas in the plant are under Lean 6S audit control.

Production and final testing is critical to ensuring that our products meet design and application requirements. Extensive testing and Statistical Process Control (SPC) trending of raw materials such as magnet wire, electrical steel and copper rotor bars, ensures supplier compliance to Baldor specifications. Throughout the build process, motor



components are repeatedly tested for conformance. For example, the Baldor•Reliance EnduraSeal insulation system gets an immersion test, during which the stator is subjected to megger and hot pot tests while being submerged in

water. The Kings Mountain plant is also capable of full load dynamometer testing up to 4,500 Hp at 7,200 volts. And this plant regularly conducts API 541 4th edition tests and provides all the associated API documentation.

