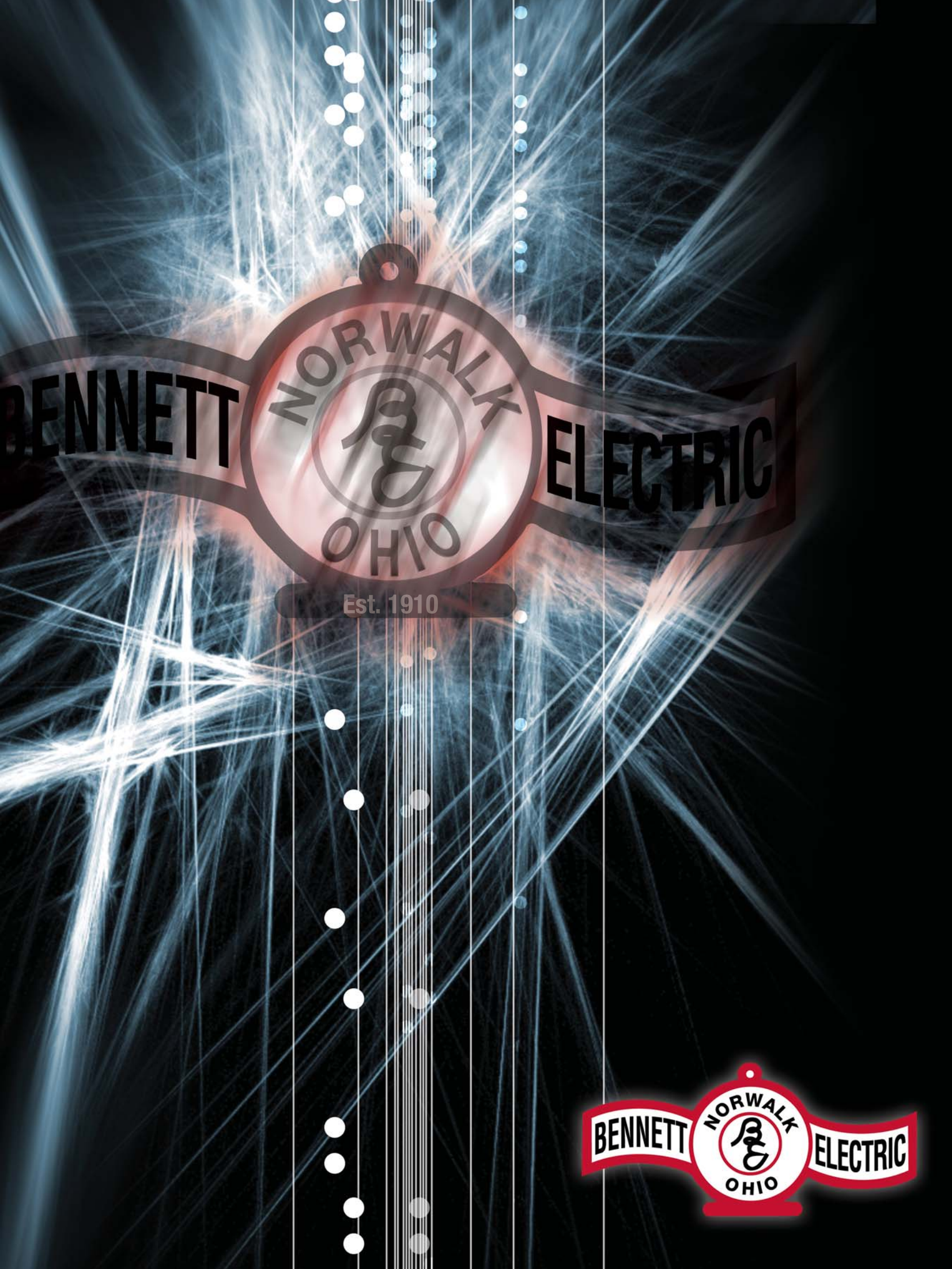

BENNETT
NORWALK
OHIO
ELECTRIC
Est. 1910
BENNETT
NORWALK
OHIO
ELECTRIC

Bennett Electric has been serving industry in northern Ohio and surrounding areas since 1910. Our facility has over 15,000 square feet of usable workspace that boasts an overhead crane spanning the entire length of the shop. Jib cranes are installed at all critical work locations. Our equipment incorporates the latest state-of-the-art technology.

Our skilled technicians are experienced in rewinding all types of motors and generators, from fractional horsepower motors through 2500 horsepower. An inventory of winding materials is maintained to support both low voltage and medium voltage configurations. We insist on maintaining the highest of industry standards using our minimum Class H rewinding materials.

Throughout its history, the name Bennett Electric has been associated with top quality service at competitive prices. As a member of **E**lectrical **A**pparatus **S**ervice **A**ssociation, Bennett is a recognized service facility for all of the major motor manufacturers.

Bennett Electric is a certified Underwriters Laboratory repair facility, one of only a few in Northern Ohio, and bears the UL certification #E84085. This, of course, extends our repair capability into UL labeled explosion-proof motors. UL certification mandates that all of our gauges and instrumentation are periodically inspected and certified.

Bennett Electric, Inc.
211 Republic St.
Norwalk, Ohio

24 Hour Emergency Service
800-874-5405

The facility offers a safe, clean environment for our employees. Process areas, associated with steam cleaning and sandblasting, are strategically located to minimize contamination throughout the work area.

A custom designed 200-ton press is utilized to safely remove couplings, bearings, sheaves, etc. Digital displays inform the operator of the amount of pressure being applied.

200-Ton Horizontal Press

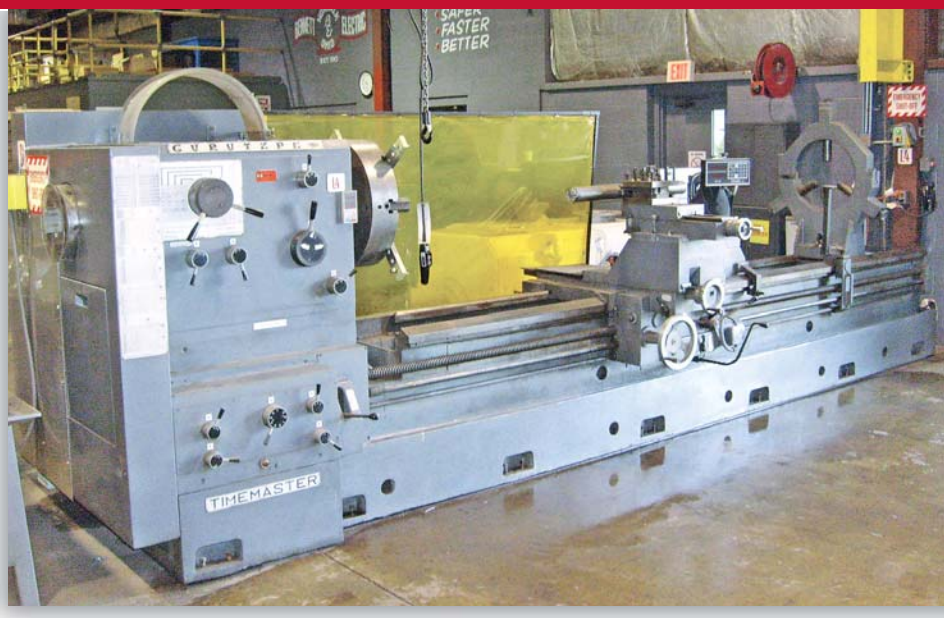
Additional presses include a 40-ton vertical unit for in-house general fabrication and a 60-ton portable unit which can be used for on-site service.

40-Ton H-Frame Press

MACHINE SHOP

Bennett Electric offers a complete, in-house machine shop. The largest of our four lathes can swing a 60" diameter piece 20' long. Having multiple machines provides flexibility and quick turnaround. Each unit is equipped with a digital readout that will minimize setup time and increase accuracy.

Two milling machines are used routinely for boring bearing housings, manufacturing parts, and installing keyways. These units are outfitted with digital readouts to help increase quality, while decreasing operating time.



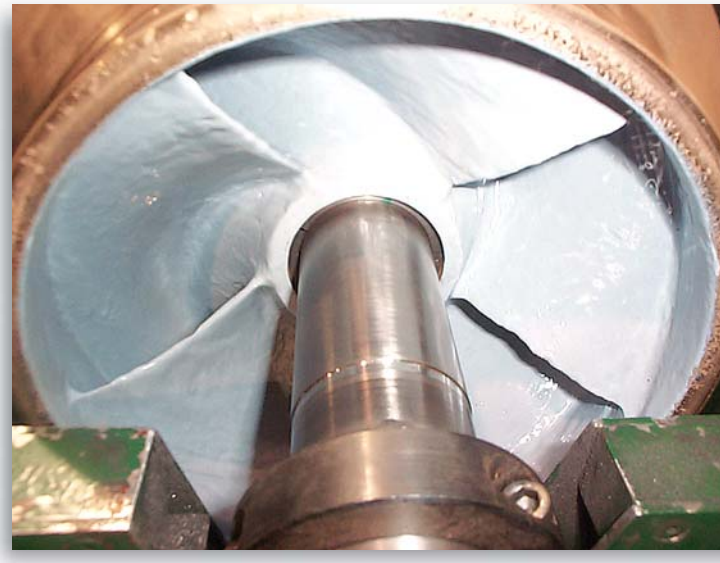
60" x 20' Lathe

Milling Machines

Shaft, endbell, and other mechanical repairs are accomplished using several available methods. Options include MIG, TIG, Arc, and thermal spray welding. Thermal spray welding combines heat with a powdered alloy such as ceramic, copper, steel, etc. Thermal spraying uses very low heat to apply the product ensuring high strength and a secure bond. Examples where this process is effective include resurfacing worn bearing journals on a shaft, and relining the copper cladding typically applied to the rotating drum of eddy current clutch.

Thermal Spray Welder

In addition, specially formulated two-part compounds can be applied to pump impellers and housings to prolong component life and improve efficiency. Ceramic coatings can also be utilized as a non-conductive barrier to prevent damaging circulating currents in bearings.



Impeller with Belzona Coating

WIND SHOP

Insulating materials and processes have made steady advancements in prolonging the life expectancy of an electric motor. A number of different insulating methods are available, dictated by specific customer applications.

As a standard, Class H insulating materials are utilized to ensure better-than-new performance. A significant inventory of copper magnet wire is maintained to handle all emergency situations. Dependence on outside suppliers is not a factor.

Wind Shop

Bennett Electric offers a specialized process referred to as vacuum pressure impregnation or VPI. The VPI process provides deep penetration leaving a solid mass free of voids. Hotspots can be as much as 20 degrees higher than the average coil temperature. The end product is a winding that will dissipate heat faster, is more resistant to moisture, oils, and chemicals, and is mechanically stronger.

Before

During

After

Armature Rewind

Imprex VPI System

The curing cycle for a specific type of varnish is crucial to the overall integrity of a new winding. A programmable, temperature controlled oven ensures that the desired temperature values are maintained to properly cure the varnishes used in the rewind process.

Baker D12R

A motor winding is subject to numerous types of faults and defects. Bennett Electric employs a number of different test methods to identify these conditions.

Our Baker D12R digital winding analyzer evaluates motor windings for various faults. The D12R is capable of performing resistance, surge, megohm, polarization index and HiPot assessments. This unit can test up to 12,000 volts. The combination of these tests can diagnose turn-to-turn and phase-to-phase shorts in windings. The analyzer also allows us to test the insulation system to verify strength and determine the location of faults.

A critical aspect of the winding process is the ability to burn out a winding without compromising the stator core. This is accomplished with a temperature controlled, self-quenching burnout oven. Uniform temperature is maintained throughout the burnout process. This minimizes the possibility of damaging the laminated core.

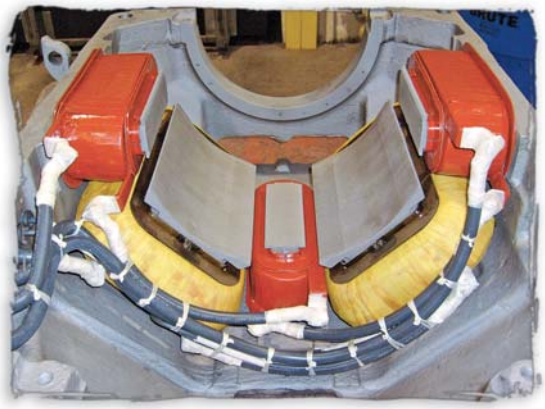
Ace Burn Out Oven

Core loss testing ensures the integrity of the laminate steel utilized in electric motor construction. Shorted laminations generate heat, which will deteriorate the insulating properties of a winding. To identify and eliminate these sources, the core loss tester is applied to check the iron losses in stators and armatures, and to identify broken bars within the rotor. By simulating operating conditions, the amount of flux is measured and calculated to determine whether a motor is worthy of repair. Some advantages of this testing include maintaining motor efficiency, enhancing reliability, decreasing potential failures, and increasing the life of the motor.

Core Loss Tester

Balancers

Balancing is often overlooked, but should be considered a crucial part of a repair. Our largest balancer can handle up to 5,000 pounds. Dual-plane precision balancing is applied to rotors, armatures, and fans to ensure proper and complete balance. Computer software allows documentation of all aspects of the balancing procedure. An ideal method of balancing an armature or rotor is with all of the running components installed (ie couplings, gears and fans.)



D.C. Specialists

Reconditioned Vertical Hollow Shaft Pump Motors

Having the ability to load test motors is another tool for eliminating potential field failures. Various power supplies are available including, AC single and three phase, AC three phase medium voltage, AC three phase variable frequency, AC three phase permanent magnet, Static DC power, and Eddy current control. Our A & W dynamometer can handle a wide range of applications.

Dynamometer

Bennett Electric implements a special field service division to address on-site problems that can occur. Trained technicians use the latest available equipment to aid in diagnosing and preventing further problems. Predictive maintenance programs help minimize downtime by red flagging potential problems. Several different services are offered depending on the application. Let us take a look at what you cannot see.

Test Panel

Disaster relief is also available. In recent years flooding has been the cause of most damage, but lightning strikes and power issues pose a huge threat as well. Bennett Electric is capable of handling a large volume of work while meeting quick deadlines. 24 hour emergency service is available with immediate pickup. We have invested heavily in new equipment, which enables us to perform high quality repairs in record-breaking time.

Bennett's recently updated truck fleet can handle motors from fractional to 2500 horsepower. In case of an accident, all trucks carry cargo insurance. By maintaining the vehicles regularly we can always count on them, so you can count on us.

BIOGRAPHY OF HARRY BENNETT

Bennett Electric was started by Harry Bennett in 1910. Mr. Bennett was quite a unique individual. At the time, he owned several businesses in the area. One of his companies was started in Milan, Ohio with partner Thomas A. Edison, manufacturing magnetos. Harry Bennett had others prestigious friends in the area which included Henry Ford, the Firestones and the Fisher Brothers from Fisher Body. Harry was an inventor and experimented with a variety of materials which included light bulb elements, many of which are still kept at our current location. One of Harry's aspirations was to design and build an automobile. He is credited with not only designing, but building one of the first automobiles in the country, which appeared on the streets of Findlay, Ohio in 1902.

Initially, automobile repair was Harry Bennett's principle business. Over time, customers brought in their electric motors to see if he could repair them. Harry recognized the need for this specialized repair service and the business eventually transforned to the servicing and sales of electric motors.

Our Mission:

Provide a service unparalleled to any other.
Help the customer grow by offering innovative solutions.
Develop a relationship that will last far into the future.

211 Republic Street ▪ Norwalk, Ohio 44857
419-668-6136 ▪ 800-874-5405 ▪ Fax 419-668-1960
www.bennett-electric.com