

Bowers

Electricals Ltd

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**Powering industry
since 1947.**

Transformers ✓ HV & LV Switchgear ✓ Motors & Repairs ✓ Project Management ✓ Service ✓

We work with clients from all sectors throughout the UK, including

- Construction
- Food Industry
- Hospitals, Schools & Universities
- Oil, Gas and Water
- Manufacturing
- Ministry of Defence
- Power Stations
- Renewable energy - Wind and Solar

We provide solutions for the power engineering industry from small industrial developments to large scale industries.

Our range of services include:

- Power transformers
- Distribution transformers
- Package substation transformers
- Amorphous Core transformers
- Cast resin transformers
- Refurbished distribution and power transformers
- Special / Bespoke transformers
- New and refurbished high voltage and low voltage switchgear
- Motors & Rewinds
- Rewind and repair of distribution and power transformers and rotating equipment
- Customer property repairs, re-engineering and modification
- A substantial stock of used electrical power and distribution equipment
- Site installation, testing, commissioning and project management

It is our aim to provide a solution to your problem and more importantly to your satisfaction.

OUR HERITAGE

Since our beginnings in 1947 as an electric motor and transformer winding business, Bowers Electricals has moved into the supply of new and refurbished power and distribution transformers, HV and LV switchgear and all manner of associated products and services, becoming one of the biggest suppliers of electrical products including energy saving Distribution and Power Transformers in the UK.

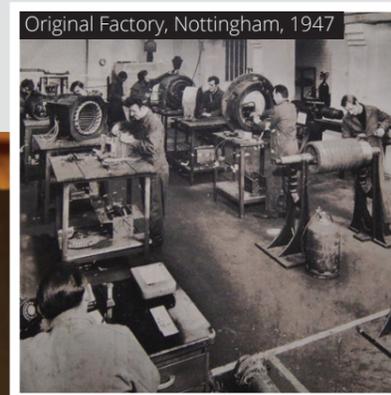
Bowers Electricals offers a full turnkey operation that includes the supply, overhaul, rewind and repair of customer property, as well as ongoing service, maintenance, and expert project management of all developments, regardless of size.

Still managed day-to-day by the Bowers family that set it up, the company is now part of the Bowers Group of Companies. We are proud of powering the industry for over 70 years.

British Heritage • Global Reputation
• World-Renowned Expertise



Michael Bowers C.E.O & David Bowers Chairman.



Original Factory, Nottingham, 1947

1947

The original company, Electric Repairs (Nottingham) was established as a motor rewind and repair company, for large and small rotating electrical equipment.

David Bowers (formerly Managing Director of RF Winder in Leeds) purchased Electric Repairs, rebuilding the company, introducing new motors, associated control equipment, refurbished transformers and switchgear.

1985

1989

Michael Bowers joined the Company.

1993

Electric Repairs (Nottingham) rebrands to Bowers Electricals Limited.

1994

Bowers Electricals Limited moves to new larger premises in Heanor, Derbyshire. For the first time, all manufacturing, development and testing facilities are centred under one roof.

Bowers Electrical manufacturers its first Distribution transformers.

1995

2000

Electrical Power Engineering Services Limited (E.P.E.S) associated company formed, providing HV & LV turnkey supply and installation solutions.

Bowers Intellivolt® 'Smart' transformer range launched; Award winning, variable reduction voltage optimisation system.

2016

2019

Bowers Group of Companies Ltd became the parent holding company to Bowers Electricals Ltd.

New Tier 2, EU 548/2014 regulation compliant range of Distribution Transformers launched.

2021

2022

The Bowers Energy Saving Transformer (B.E.S.T) launched offering significantly low losses compared to conventional laminated steel units.



Power Generation



Power generation transmitted via National Grid

Bowers Electricals provide energy solutions for a wide range of industrial, commercial and residential applications.



Transformers

Bowers produces solutions for clients from all industrial sectors including:

- Petrochem Industry
- Chemical Plants
- Mining Industry
- Power Stations
- Data Centres
- Gas Generation and CHP Plants
- Offshore Projects
- Wind Farms
- Traction



Package transformers

Bowers offer a comprehensive range of complete package substation transformers. We are able to tailor these to suit customers' requirements, giving flexibility when mounting to LV & HV switchgear.



Bowers Electricals transformers are designed to fit seamlessly between energy generation and the end user with power transformers up to 60MVA at 66kV. We have solutions for all applications and working environments. Our transformers are installed across a wide range of UK and International networks, electricity providers, commercial, Industrial and residential customers.

We provide power transformers, distribution transformers and transmission solutions, for all types of network electricity generation including, Power stations, Wind farms and Solar PV.



Heavy Industry
Large Factories

Light Industry
Medium Factories

Small Commercial
& Residential



Distribution transformers

Our standard distribution transformer range is usually available from 315kVA to 3150kVA, with a typical 11000V input to 415V no-load output, they are designed to accommodate bolt-on LV & HV cable boxes.



Tier 2 transformers

Typically range from 50kVA to 3150kVA, and are fully compliant with all current UK and EU directives including the latest EU 548/2014 Eco design standards.



HV / LV Switchgear

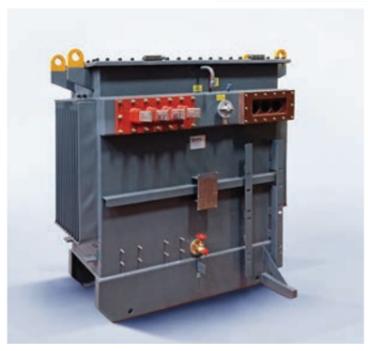
Bowers Electricals supplies new and refurbished HV & LV voltage distribution boards and control panels to suit customers requirements.



Motors

We supply new energy efficient induction motors up to 500kW and are a founding member of AEMT (Association of Electrical Machinery Trades).

Transformers



Power Transformers

Our in-house technical and design experts, supported by our operational facility, offer fully tailored solutions to suit your transformer requirements. All our transformers are manufactured in accordance with UK, EU and International regulations.

Bowers Electricals offers power transformers up to 60MVA at 66kV available in ONAN, ONAF or OFAF specifications, complete with standard and special fittings that include: on load tap changers; tap changer control panels; separate and integral cooling bank systems; forced fan cooling; oil circulation pump systems; temperature monitoring systems; HV and LV cable boxes or outdoor bushings; Conservator and Buchholz etc.

Our team of experienced technicians can quickly react to your individual requirements, with short lead times and competitive prices to your exact specifications.

Distribution Transformers - Tier 2

Bowers Tier 2 Transformers offer significantly reduced no-load losses against Pre 2015 CRGO units.

They are fully compliant with all current UK and EU directives including the latest Tier 2 EU directive 548/2014, and offer marked reductions both in carbon emissions and energy waste over the course of a units typical 25 year lifespan. Savings can total up to £8,000 per annum, when comparing the running costs of our Tier 2 transformer to a historical 1950's standard, CRGO transformer.

Our standard range of Tier 2 Distribution Transformers are manufactured using cold rolled grain oriented (CRGO) steel. They range from 50kVA to 3150kVA with voltage ratios of 3.3kV, 6.6kV, 11kV and 33kV step down to 415V. Standard vector Dyn11 and include an extended voltage tapping range -5% to +7.5%.

Our distribution transformers are typically designed with HV and LV flanges to BS2562 facings suitable for accommodation of bolt-on HV and LV cable boxes or LV transformer mounted feeder pillars / ACB / MCCB cabinets and HV transformer mounted switch gear to ENATS standards.

Bowers Electricals standard units are also fitted with bolt-on panel design radiators and have been carefully designed so that HV switch gear can be fitted without interfering with the radiators removing the need for extension throats.

Package Substation Transformers

As part of our Distribution Transformer range, We also offer a comprehensive range of Package Substation Transformers. They meet the evolving DNO and IDNO requirements and are manufactured in-line with the Energy Network Association specifications (ENATS) ENA-TS-35-1 and EU 548/2014 Tier 2 regulations.

Bowers knowledge and experience means we can tailor a bespoke package to suit customers' requirements, giving you the flexibility when mounting LV & HV switch gear.

Our complete package substation transformer benefits include: HV/LV switch gear supplied already mounted directly on the same side, single lift arrangements, reduced on site installation cost, elimination of expensive cabling costs.

Our team of experienced engineers can quickly react to your individual requirements.



Intellivolt 'Smart' Transformer

Two technologies, one revolutionary solution. A low loss distribution transformer with advanced voltage optimisation technology.

Bowers Intellivolt® is unlike any other transformer on the market, the "intelligent" transformer constantly monitors the 3 outgoing voltages independently and optimises them to the required output level, resulting in reduced losses and increased service life of electrical equipment.

When used with equipment such as refrigeration or air cooling devices, 3 phase motors, high-intensity discharge or fluorescent lighting, Intellivolt® voltage optimisation not only helps to maximise equipment efficiency but it reduces energy consumption to create measurable financial savings.

Bowers Intellivolt® Intelligent Real-Time energy monitoring technology, enables users to pinpoint energy savings remotely, accurately and in real time.

The B.E.S.T (Bowers Energy Saving Transformer)

The Bowers Energy Saving Transformer, or B.E.S.T for short, is an alternative to conventional distribution transformers. It increases energy efficiency efforts by saving on energy losses and reducing CO2 waste. Whilst also decreasing total ownership costs over the 25-30 years in service.

With the introduction of the UK Government's Net Zero goals and the global efforts to improve energy efficiency businesses are turning to more eco-friendly practices. The 2021 Tier 2 EU Ecodesign Regulation 548/2014 tightens the requirements for load-losses on energy-related products.

The B.E.S.T losses far exceed the losses that the Tier 2 regulations require.

We can achieve these reduced losses by using an Amorphous Core. This replaces the Cold Rolled Grain Oriented Steel (CRGO) cores which our standard distribution transformers use. The Amorphous material has different properties to CRGO such as atomic structure, electrical resistance, and sheet thickness. These factors impact the transformer losses which are reduced massively when using an Amorphous Core.



Transformers



Cast Resin Transformers

Our Cast Resin transformers are designed to suit our customers' requirements either in IP00 specification, often required by LV switchboard manufacturers, or with sheet steel ventilated enclosures and cable boxes, which can be designed and built to suit bespoke specifications.

These Cast Resin transformers are designed and constructed with their windings encapsulated in resin and are an excellent alternative to traditional oil-immersed transformers. Other qualities include: reduced overall sizes, self-extinguishing and high mechanical resistance to electro-dynamic stresses.

All our cast resin transformers are manufactured to IEC 60076-11 and Eco Regulation 548/2014 as applicable. Our standard range of cast resin transformers is 50kVA up to 3150kVA.



Bespoke

We know every job is different, that's why we pride ourselves on understanding the customers requirements. Our team of technical design engineers and dedicated project team take time to understand each project, so we are in a unique position to offer bespoke energy saving solutions for our clients, with a fast turnaround.

Refurbished Stock

Bowers Electricals always hold large stocks of quality used power equipment, including power and distribution transformers, and other associated power equipment.

All our equipment is fully refurbished by our engineers, and comes with a comprehensive warranty of two years on transformers and one year on all other equipment.

Our refurbished transformer range normally includes standard distribution up to 5MVA and Power transformers up to 90MVA.

Our stock can include all insulation mediums including Oil, Midel, Silicon and FR3.

We also provide refurbished Cast Resin and air cooled transformers, special ratio transformers (both in step up & step down) design are also available.



"There are several suppliers of transformers in the UK but we wanted a company that offered three things: quality reliability and, of course, customer service. Bowers supplied high quality equipment on time and with professional installation as well as customer service."

Hiro Toyoda, Vice-President, Mugen Euro (race engine tuning manufacturers)



Motors & Rewinds



We are one of Europe's largest suppliers of new and reconditioned electrical equipment, our involvement and knowledge in Motors and rewinding equipment dates back some 70 years.

Bowers Electricals carry extensive stock of both new and refurbished, energy efficient, Induction Motors and DC machines.

We are a leading distributor and approved repair centre for Brook Crompton Motors.



Brook Crompton are a leading provider of energy efficient electric motors, known for delivering quality and innovation for over a century. We offer Brook Crompton's comprehensive range of low, medium & high voltage motors, our drives packages provide assured efficiency and reliability in a user-friendly variable speed drive system.

Products include:

- New Induction Motors up to 500kW
- Reconditioned Slip Ring and squirrel cage Induction motors up to 5000kW
- Energy efficient motors
- Flameproof motors
- Variable speed drives
- Cooling Fans
- DC Motors
- Thyristor drives & Invertors
- DOL Starters, Star delta Starters, Stator Rotor Starters.
- Gearboxes



We are a founding member of the AEMT (Association of Electrical machinery trades) Bowers Electricals, are proud to continue our association which dates back to 1947.

No job is too large or small, we are able to supply even the largest machines, through our close association with our overseas partners. Contact us today to find the solution to suit your requirements.



Motor Rewinds & Repairs

Bowers Electricals is one of the leading electrical repair, testing and service companies.

We know that machine downtime can result in costly lost production and delayed deliveries, that's why our on-site facilities and skilled technical engineers are available 24/7, providing a fast turn around and reduced equipment downtime.

Our Motor Rewind & Repairs division offer up to 4000kW and 6600v motor repairs, and up to 5 tonne, gearbox overhauls from our factory. We can also redesign and service all types of HV & LV AC Induction motors, Alternators, DC machines and other associated rotating equipment.

We also provide winding and repairs up to 36kV, including coil winding and surge testing. We have the facilities to replace insulation to maintain, or possibly improve original manufactured efficiencies during the rewinding process.

All our repairs and rewinds are carried out in accordance with our quality assurance to ISO9001:2015.

We undertake many Electro-mechanical repairs which complement our testing, repair and rewind facilities.

Our fully equipped machine shop has one of the largest centre lathes available, allowing precision milling of large armatures, shafts, and rotors. We Re-key and Re-shaft rotors on a regular basis, along with specialist motor repairs and motor part manufacture.

Traction

We have the capacity to undertake a wide range of engineering projects. For instance, we offer a full range of transport Infrastructure maintenance, carrying out overhauls and repairs to traction motors, bogies, and traction wheels.

We have the workshop facilities to press up to 50 tonnes and the engineering facilities to design and produce most mechanical components.

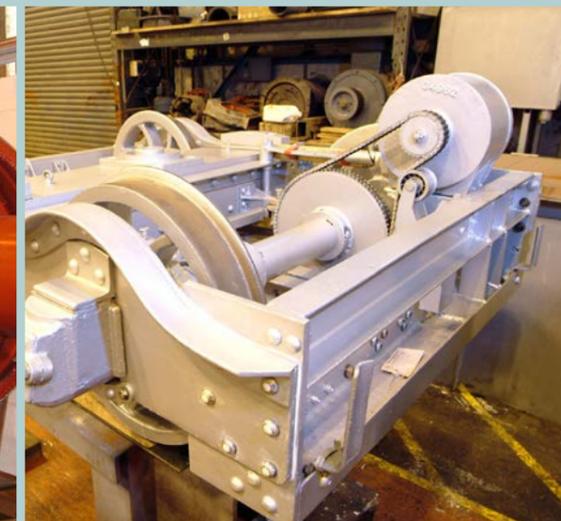
Gear boxes, Pumps, Fans & Associated Equipment

Bowers Electricals provide a full service and overhaul of industrial gear boxes (up to 5 tonnes), pumps and associated equipment, including compressors, exhausts, blowers, starter motors and auxiliary generators.

Our service engineers are available to service your machinery from our workshop in Heanor, Derbyshire or on-site at your premises.



No job is too large or small, Bowers Electricals are able to repair even the largest machines.



High, Medium & Low Voltage Switchgear

Bowers Electricals are suppliers of high, medium and low voltage switchgear.

We hold stock of Schneider, Hawker Siddeley Eclipse and other leading Switchgear manufacturers, we are able to provide solutions perfectly suited to our customer requirements. Our industry knowledge is second to none.

We appreciate that time is money, so Bowers Electricals always keep a high level of new and refurbished Switchgear in stock, improving lead times, and reducing customer downtime.



High Voltage

We can supply and install the full range of HV 11000V switchgear, in a variety of specifications.

Our HV Switchgear offers insulating mediums including vacuum and SF6 isolators, circuit breaker feeders, bus section switches and ring main units. We can also offer 11kV metering units and associated metering.

Bowers Electricals, are stockist of Schneider SF6 insulated Ring Main Units (RMU) available for voltage networks up to 13.8kV. Schneider SF6 RMU's are engineered for all climates and provide flexibility at any location. Available with a wide range of options, with indoor and outdoor IP54 design and ratings up to 13.8 kV, 630 A and 21 kA. Schneider SF6 Ringmaster has proved highly successful in markets around the world.

We are also able to supply Schneider Genie, Hawker Siddeley Eclipse and various other makes and types of HV switchgear. Our sales team can assist you with network design, and protection requirements ranging from typical transformer feeders and incomers to generator and utility systems protection.

We also hold a large stock inventory of associated products including cable boxes and interconnecting busbars to allow packages to be arranged on a short lead time basis.

Low Voltage

Bowers Electricals supplies new low voltage distribution boards and control panels to suit all customer specifications and requirements.

Our specialist LV switchboards from Schneider and ABB use the latest MCCB, ACB and switch fuse units, they are available in various specifications, suitable for top or bottom cable access and front or rear entry.

We also have the in-house facilities and skilled technicians to refurbish and upgrade your existing LV switchboards.

In addition to our LV distribution switchboards, we offer wall mounted distribution boards and LV feeder pillars. We also offer a range of new transformer mounted feeder pillars and ACB / MCCB outdoor cabinets which complement our transformer division.

At Bowers Electrical Ltd we not only supply the equipment, but can also provide lifetime on site technical support and maintenance for a wide range of applications. Our dedicated team of High Voltage engineers can provide full on-site maintenance of all your electrical plant and power equipment 24/7, 365 days a year across the UK and overseas.

We offer fully tailored maintenance agreements; these can be individually tailored to your specific requirements. Contracts are typically up to 5 years and include full maintenance, annual inspections and testing of the transformer oil.

Bowers Electricals service and maintenance schedules are carefully designed to optimise the performance, durability, and lifespan of your equipment. For instance, as part of the maintenance schedule our service engineers carry out a Transformer oil sampling and trend analysis. This is one key indicator to help identify a potential problem with a transformer and prevent catastrophic failure. We are also able to offer bespoke service and maintenance contracts to suit customer's requirements.

As well as on-site support, our maintenance customers receive the full support of our technical team, including the provision of HV network diagrams, oil trend analysis, information and recommendations on any operational restrictions, DIN's and SOP's.

Bowers Electricals will always make recommendations on any suggested upgrade or modifications we consider necessary to improve the reliability and effectiveness of your network.

Bowers Electricals have one of the largest stocks of both new and used power equipment, including HV Distribution and Power transformers and all associated HV & LV switchgear. With equipment in stock and readily available, Bowers can react quickly to any breakdown situation. Our team of service engineers can assist you to ensure operations return to normal with minimum disruption, reducing lost production time and working costs.

Benefits of ongoing Maintenance - Keeping maintenance records up to date is VITAL!

Not only will they satisfy the HSE that appropriate steps are being taken to ensure the integrity and safety of your power network and help to prevent potential prosecution under the Electricity at Work Regulations 1989, supported by Memorandum of Guidance (ISBN 011 8839632) they will also help to satisfy any switching personnel that the network equipment has been appropriately maintained, and as safe as possible to work on.

If you are considering a service and maintenance contract, one of our experienced site maintenance team would be happy to visit you and carry out a free on-site survey of your equipment. Bowers Electricals can put together a proposal for your consideration.

HV & LV Installations

At Bowers Electricals we pride ourselves on the level of service provided. We can project manage every aspect of your high voltage distribution network site installation.

Our highly qualified, specialist site engineers can carry out HV project and fault finding work up to 33kv, all backed up by a 24/7, 365 days a year, customer support network, across the UK.



Our Services include:

- Turnkey project design and installation
- HV and LV Cable Installation at 33kV, 11kV and other mains cables down to 415V
- System protection & grading studies
- HV jointing up to 33kV
- Earth form installation and soil resistivity analysis
- Site maintenance of customers' property using data collection, by contracted option or adhoc basis
- Cable trenching and civils
- Cable fault location
- Senior authorised personnel.

Bowers Electricals can provide complete "Turnkey" packages, including the design, manufacture, overhaul, refurbishment, installation, testing, commissioning, maintenance and after sales support.

Our Container package substations are designed to fit inside either a 20ft or 40ft shipping container, they often combine LV and HV Switchgear and Distribution transformers all in one standard or bespoke package.

Our typical Bowers Package Substation shipping container package includes:

- Wall mounted distribution board for lighting and general supplies
- Overhead fluorescent strip lights complete with light switch
- Access door at switchboard end with push bolt release at front end of sub-station with mesh door access.
- Mesh fence with door access segregating HV & LV sides
- Provision for cable access for 11kV cable
- Provision for cable access out of container for LV panel
- Internal earth bar and mandatory warning signs.

Additional options include but not restricted to:

- 30V DC wall mounted tripping unit
- Thermostatic wall mounted heaters
- Air conditioning
- Internal battery back-up emergency lighting units
- Extracting cooler fans at the front and rear of the container, complete with speed control, thermostat and gravity shutters
- External flood light with 'walk up' sensor
- Luminous internal break-out push handle for access doors.



Site disconnection/ re-instatement & local electricity network operation liaison

Our services include liaison at engineering manager level to ensure isolation, disconnection and effective removal of your redundant transformers, HV and LV switchgear and associated equipment including capping of redundant supplies and reinstatement of new or refurbished equipment and any new substation designs.

Our engineering team will co-ordinate and liaise with the Local Electricity network provider to effect any primary network and metering alterations.

We offer a full substation removal and dismantling service for all equipment up to 33kV.



Bowers Electricals will buyback, dismantle and dispose of redundant or surplus equipment. We always have a constant requirement for good quality, used stock for our refurbished sales department.

Plant purchase

We offer top buyback prices for your surplus equipment; our extensive stock includes:

- Power & distribution transformers
- High voltage oil, SF6 and vacuum insulated switchgear
- Low voltage distribution switchgear
- AC and DC motors and associated equipment
- Generators



Specialist services include

Disposal of PCB contaminated oil, silicone and Midel insulating fluids.

- Arrange disposal of redundant and contaminated oil
- Disposal of PCB capacitors
- Disconnection and disposal of Mercury Arc rectifiers
- SF6 gas recovery and disposal
- Specialist lifts and transportation including abnormal load movements.

Health and Safety

All site work is carried out under stringent Health & Safety procedures and inductions will be carried out to cover any site specific safety rules. Method and risk assessments will be presented prior to commencement of any site work, together with any relevant COSHH or specialist handling data.

Equipment will be removed from site under our waste carriers licence and any special or hazardous products will be removed and disposed of under current waste legislation together with all relevant transfer and disposal certificates.

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