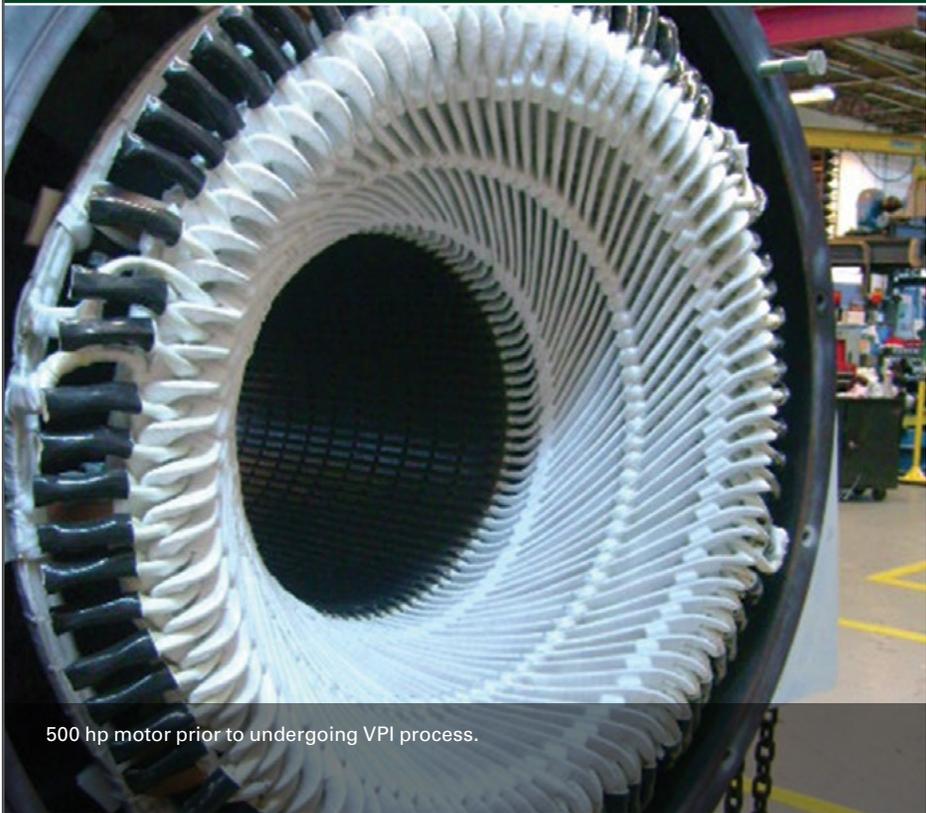


Schulz Group History

The Schulz Group has been an industry leader in electric motor, controls and generator services for over 100 years. Our group was founded on the simple principles of providing world class quality service and repairs, coupled with exceptional customer service. The Schulz Group's ultimate goal is to help our customers increase production while reducing and eliminating unplanned downtime. Now part of The Timken Company, the Schulz Group is better positioned for further growth and is dedicated to expanding its proven reputation as the leader in complete power train repair solutions.

Schulz is ISO 9001:2008 Certified.



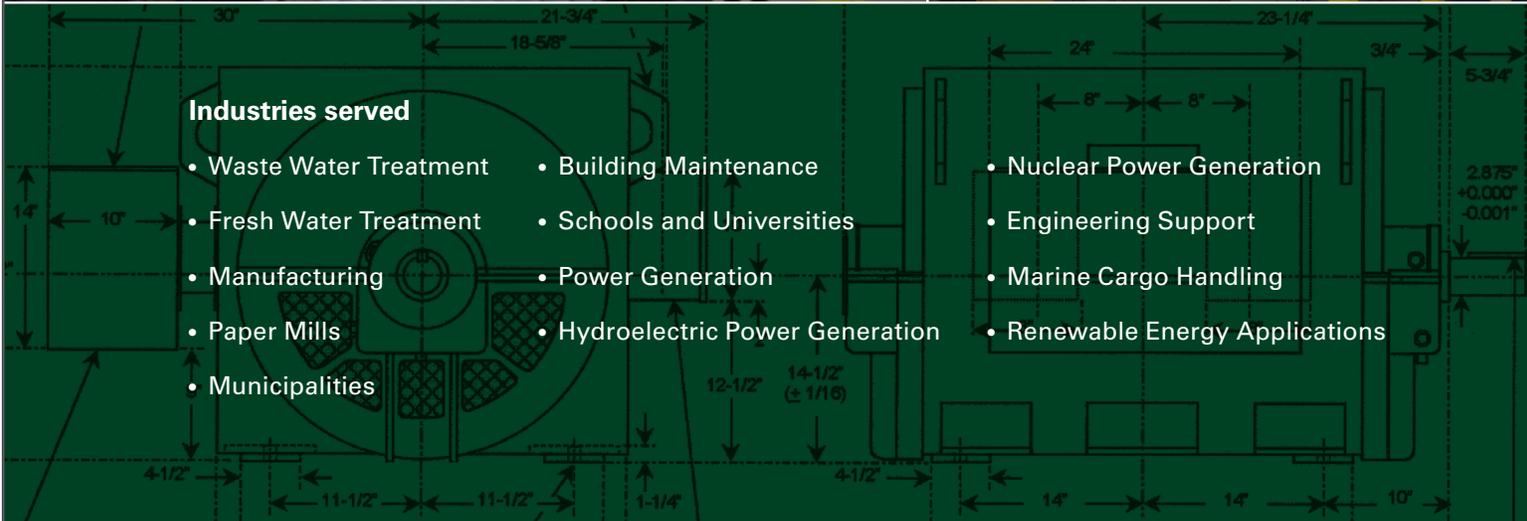
500 hp motor prior to undergoing VPI process.



Aerial view of New Haven's 50,000 sq ft repair facility.



Rotor being balanced on Schenck dynamic balancing machine.



Motor/Generator Repair Services



On-site crews disassemble a hydroelectric generator prior to repair.



Technicians rewinding and restacking a 2000 HP, 4 kV circ water pump motor.



Winding technician performing end turn shaping prior to connection.

Electric motor and generator repairs and rewinds

Many times, it is more economical to repair or rewind than replace motors and generators. Our skilled and experienced team will inspect and advise as to what is the most cost effective option. All repairs and rewinds are returned to customers in "as new" condition, and backed by our repair warranty. Our facilities are equipped to handle repairs, rewinds and overhauls in-house to 40 ton/8000 hp.

Testing services

Schulz Group incorporates one of the most rigorous, in-depth quality programs in the industry. We offer a wide variety of testing to ensure that customers' motors or generators exceed their performance expectations.

Vacuum pressure impregnation systems (VPI)

A winding that undergoes VPI is virtually impervious to oil, moisture and chemical contaminants. VPI results in the greatest mechanical strength for windings, a cooler running motor, improves performance and reliability, and extends machine life. VPI can be used for AC and DC motor stators, armatures, field coils, and transformers.

Replacement coils and winding

All coils are inspected for fit, finish, electrical soundness and dielectric integrity. Coils are Hi-Pot tested to ensure insulation values and surge tested at 100% of the determined original test voltage.

Machine shop

In-house machining allows for more rapid turn around times. Together with our strict quality program, our machine shops ensure that rigid specifications are maintained throughout the entire machining process. Specialty services include metal stitching.

Pump repair

Choosing one company to repair your pumps and the motors that drive them will extend the life of your equipment by ensuring equipment compatibility and continuity of maintenance services.

CO2 cleaning

CO2 dry ice cleaning is an efficient and cost effective way to minimize downtime while achieving superior cleaning results and:

- Is non-abrasive, non-flammable and non-conductive;
- Is environmentally friendly and contains no secondary contaminants.

CO2 dry ice cleaning is being used successfully in many applications including electrical power and rotating equipment (electric motors, windings, hydroelectric generators, and bearings).

Gearbox repair

Our gearbox repair center has manufacturing, engineering, technical support, overhaul and testing, on-site capabilities, and is committed to on-time delivery and the highest quality services in the industry.



Catastrophic damage to a housing as seen prior to metal stitching.



Repaired housing after metal stitching is complete.

Predictive Maintenance and Diagnostics



Hot spots are detected while performing Infrared Thermography.



Online motor testing technician conducting motor performance tests.



On-site dynamic balancing of a large I.D. fan at a power plant.

Predictive maintenance can help avoid catastrophic failures and reduce downtime by identifying machines near failure or by monitoring a machine's performance over time. Services include vibration trending and analysis, infrared thermography, on-line motor testing, VFD repair, laser alignment and dynamic balancing.

Infrared thermography

Infrared thermography can provide early warning of problems with critical equipment before catastrophic failure. By identifying overheating electrical connections and other machine components, repairs can be scheduled to minimize downtime.

Applications for infrared thermography:

- Power distribution and control cabinets
- Building envelopes and structures
- Electric motor conduit box and frame temperature
- Mechanical bearing inspections
- Electrical systems
- Process problems due to heat loss

Vibration trending and analysis

Vibration analysis and trending is a method of evaluating current machine condition and monitoring a machine's changes over a period of time. It can also be used to pinpoint a source of several problems such as misalignment, imbalance and bearing issues. Vibration trending and analysis can be performed on all rotating equipment.

Applications for vibration trending and analysis:

- Motors
- Pumps
- Air handlers
- Fans
- Machines
- Gearboxes

On-line motor testing

This in-service motor analyzer takes the next step in providing complete predictive and preventive maintenance programs. It provides root cause analysis through the separation of mechanical and electrical issues and is designed to pinpoint the challenges that rotating machinery faces.

Applications and tests available

- Motor performance tests
- Motor conditions tests
- Energy assessment
- Advanced data collection
- Data organization
- Power condition tests

On-site dynamic balancing and laser alignment

Nearly anything that rotates, or is supported by bearings that allow it to rotate, needs balancing to ensure quality performance. Schulz Group utilizes CSI and various Schenck models of balancing equipment to balance up to 60,000 lbs. in-house.

All precision equipment must also be aligned in order to function accurately. Schulz technicians provide print outs and live visual displays detailing specifications and tolerances for alignment. Laser alignment can be done on any size equipment from 5 hp and up, on both horizontal and vertical motors. Additionally, we also have the capability to align pulleys and belts.

Control Systems Engineering



Custom panel as designed by the custom controls team.



Control system upgrades result in immediate energy savings.

Energy efficiency upgrades

Designing and installing energy saving systems is a core focus of our custom controls and systems integration team.

Many existing systems are poorly documented and hard to troubleshoot and fix. Besides being prone to breakdown, many systems suffer from a lack of replacement part availability and manufacturer support.

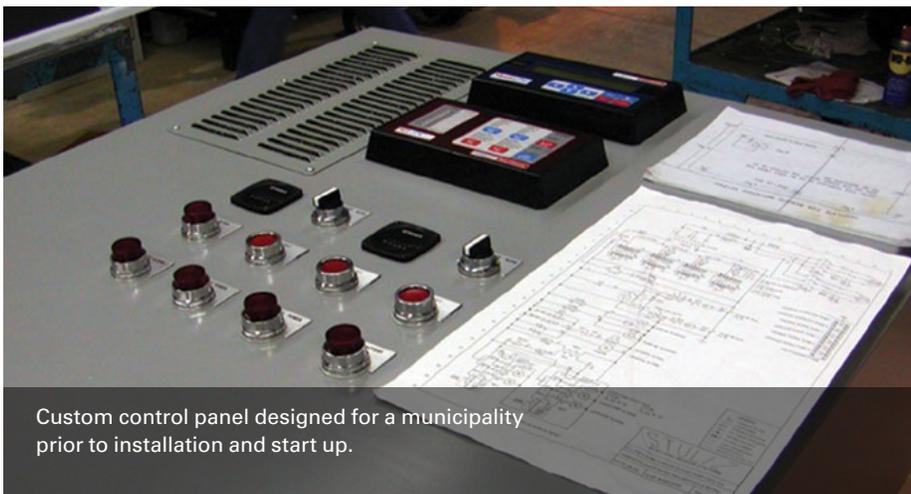
Whether replacing individual components, updating wiring and program documentation, or redesigning an entire control system, Schulz Group will work with you to evaluate your present system's condition and provide upgrade options that apply.

State-of-the-art variable speed drives, coupled with modern process feedback transmitters and programmable controls, can allow existing production equipment to operate with more flexibility, increase production with less waste, and lead to more uptime and better quality.

In short, better control means better reliability.

Energy savings are immediate with power company rebates and funding of up to 50% of the project cost in some cases.

Applications that can see immediate benefits include pumping stations, air handling systems, paper, wire and coating lines, conveyors and many more.



Custom control panel designed for a municipality prior to installation and start up.

AC Upgrade with Turnkey Digital System Increases Profits

Problem:

Our client had a 400 HP DC motor with outdated analog controls. A large part of their revenue was generated by the extruder system, which was the critical piece of their overall system. Downtime was costly. The client was subject to penalties and late fees that were tied to lost production and missed deadlines. Simply put, this system had to operate with very precise controls so that high quality products could be delivered to their customers on time, and at agreed upon prices.

Solution: Upgrade from DC to AC

The Schulz Group provided a turnkey, state-of-the-art digital system including:

- 500 HP premium efficient motor (96.4%)
- 500 HP high efficient drive (greater than 97% efficient)
- Line reactor
- Encoder
- Start up and tuning

The Benefits:

- Decreased downtime with increased production
- Reduction in product waste
- Maintenance on the new AC motor and controls was minimal compared to the DC system
- Replacement parts were now available

Gearbox Repair



Each overhauled gearbox undergoes an instrumented, full-speed test.



Technician obtaining tooth space measurement for quality control check.



State-of-the-art Höfler form grinders achieve AGMA quality 15 gearing.

Gearing solutions from a world leader

The Schulz Group now offers gearbox repair services, and is the only New England-based supplier to have access to the SOP's and intellectual property of The Timken Company, which includes Philadelphia Gear, Western Gear, WesTech and DeLaval Steam Turbine brand gear drives.

As part of a network of regional service centers focused on total power train solutions, the Schulz Group is uniquely positioned to offer its customers inspection, overhaul and upgrade solutions for their mission critical gear drives. We use the same processes, procedures that Philadelphia Gear has pioneered since 1892, and we back it all with a best-in-industry, 3-year warranty.

Expertise in the service center, reliability in the field

Using state-of-the-art inspection and measurement techniques, we are equipped to answer critical operational questions from our customers. Our goal is to provide the rotating equipment decision makers with the data they need to make informed decisions.

Additionally, by performing a detailed design review of both the gearbox and its application, the service center can determine the up-rate potential of the unit, and incorporate any designed upgrades during the inspect and repair process.

Gear repair services

Backed by more than a century of engineering and manufacturing excellence, the Schulz Group is proud to face the toughest gearbox repair challenges in the most demanding industries.

- Expertise in all gearing types and applications
- On-site assistance 24/7/365
- Ability to work on any brand, any time

- Reverse engineering and up-rating capability
- Parts manufactured to OEM specs
- ISO 9001 Certified

Engineered upgrades to get more out of your equipment

Things change over time. Yesterday's state-of-the-art equipment is today's high risk machine. Changes to your processes and outputs may have occurred since your equipment was installed, yet capital dollars for replacement have gotten tighter. Call your Schulz Group representative today to see how we can extend the life of your critical equipment. After all, our goal is the same as yours: reduce unplanned downtime.



Gearbox during final assembly in preparation for testing.

Switchgear and Transformers



A reconditioned breaker retrofitted with a ZERO-Hertz solid state over-current device.



Technician performing final testing of breaker prior to delivery and installation at customer site.



Reconditioned circuit breaker ready for installation at customer site.

Switchgear and transformers are essential elements in power supply systems. Schulz Group provides a range of services including switchgear maintenance, inspection and testing.

Maintenance programs

Prevent catastrophic failures and unexpected downtime to your power system by allowing Schulz Group to design a complete maintenance program, including predictive testing and preventive maintenance.

We work with our customers to develop a site-specific maintenance plan, which includes condition monitoring in specified intervals for essential equipment.

- Low voltage air circuit breakers
- Medium voltage air and vacuum circuit breakers
- Low and medium voltage switchgear
- Low and medium voltage cables
- Metal-enclosed busways
- Protective relays
- Large dry-type transformers
- Oil-filled transformers

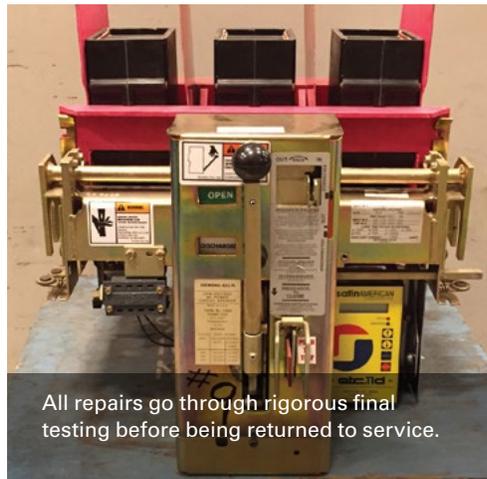
Repair, redesign, rebuild and upgrade

Whether you require on-site help or send repairs to a Schulz Group service center, you can rest assured that the most qualified technicians will work to keep downtime to a minimum.

Services include:

- Primary or secondary current injection testing of low voltage air circuit breakers
- Repair and overhaul of low and medium voltage circuit breakers
- Retrofit/upgrade of low voltage air circuit breakers with modern solid state trip units
- Protective relay and meter testing and calibration

- Transformer testing
- Transformer oil sampling and analysis
- High potential testing
- Thermographic surveys (IR Inspection)
- Acceptance testing of new Installations
- Power factor testing (transformers, generators, breakers, etc.)
- Medium voltage motor starter Electrical testing and maintenance
- Electronic circuit board repair
- 24-hour emergency service



All repairs go through rigorous final testing before being returned to service.



Additional view of refurbished circuit breaker prior to delivery.

Overall Capabilities



30 Gando Drive, New Haven, CT 06513 |
Phone: (203) 562-5811 | Fax: (203) 562-1082



1 McAlister Farm Road, Portland, ME 04103 |
Phone: (207) 699-2501 | Fax: (207) 699-2508



60 Darin Drive, Augusta, ME 04330 |
Phone: (207) 623-7500 | Fax: (203) 623-7538

Motor shop

- Motor and generator repairs in-house to 8000HP/40 ton
- Vacuum pressure impregnation (VPI)
- Dynamometer testing: AC horizontal to 1500HP/1000HP vertical
- Authorized by UL for repair of hazardous duty motors
- Core loss testing
- EL CID testing
- Environmentally controlled coil forming department

Testing services

- AC power: 1500kVA continuous at 0 to 110V/600V/2500V/5000V/7000V/13.2kV
- DC power: 0 to 600V at 1200A, 0 to 1200V at 300A
- Dynamometers: fractional, 15HP, 100HP, 700HP, 1000HP (vertical) and 1500HP
- Surge tester: 0 to 60,000V
- High potential tester: 0 to 60,000V AC/100,000DC
- Continuous megger: 5000V/3000 gigaohms
- Low resistance: biddle ductor to 1 microhm
- Data acquisition systems including the ADAMS, ADAMS2 and ADRE system by GE Bently-Nevada

Machine shop services

- Large machining capabilities
- Babbitt bearing repairs
- Vertical and horizontal digital boring mills
- Metal stitching for crack repairs
- Dynamic balancing to 60,000 lbs.
- Welding - Tig, Mig, Arc and Gas
- Flame spray metalizing

New product sales

Our long standing distribution relationships allow the Schulz Group to provide competitive pricing on:

- Motors
- Drives (VFDs)
- Gearboxes
- Pumps
- Controls

TIMKEN

The Timken team applies their know-how to improve the reliability and performance of machinery in diverse markets worldwide. The company designs, makes and markets mechanical components, including bearings, gears, chain and related mechanical power transmission products and services.

Stronger. Commitment. Stronger. Value. Stronger. Worldwide. Stronger. Together. | Stronger. By Design.

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