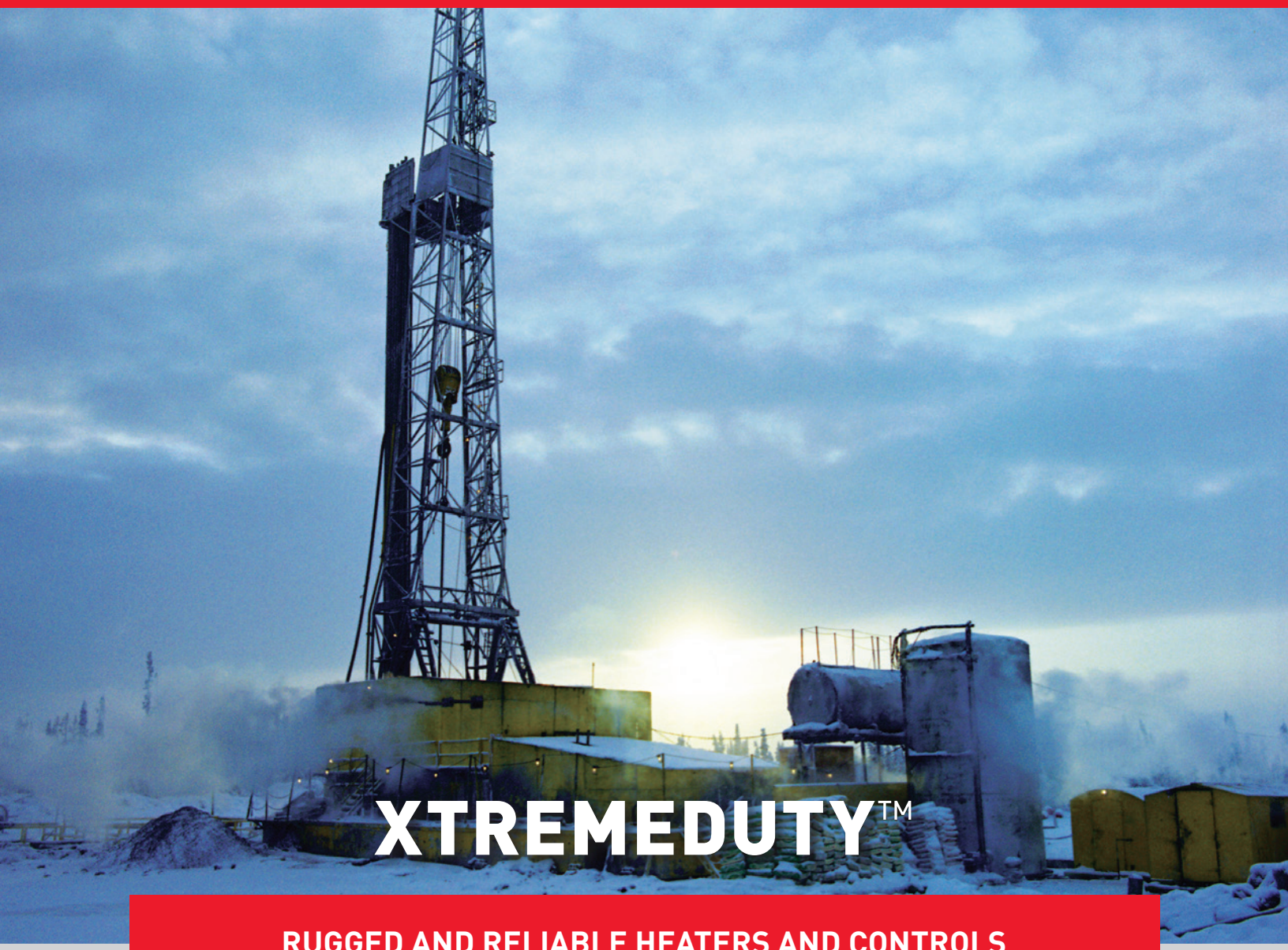
CHROMALOX
Advanced Thermal Technologies



XTREMEDUTY™

RUGGED AND RELIABLE HEATERS AND CONTROLS

From the global leader in advanced thermal technologies

- **Low Maintenance** – Rugged and durable design means intervention is rarely required to maintain operation.
- **Superior Performance** – Optimized heat transfer and innovative controls ensure peak performance.
- **Moisture & Corrosion Resistance** – By utilizing proven materials, coatings and enclosures certified to the latest global ingress protection standards, products help to minimize downtime.
- **Faster Start-up** – Enhanced design features provide faster start-up time in extreme temperatures.
- **Reduced Risk** – Equipped with redundant safety features and subjected to life testing, XtremeDuty™ products provide safe, reliable operation.
- **Hazardous Area Approved** – Many of our XtremeDuty™ products feature hazardous location certifications, such as ATEX, IECEx, UL, FM and CSA.

XTREMEDUTY™

XtremeDuty™ is a suite of custom-engineered thermal solutions that feature engineering, material and proprietary control technologies designed for the most extreme environmental and process conditions. Our vertically integrated manufacturing systems allow for customized solutions that match the requirements brought on by any climate or process.

XtremeDuty™ products carry the safety and security of stringent third-party certifications, and are subjected to intense performance and endurance testing through our in-house and partner test labs. You can be assured that an Chromalox XtremeDuty™ product will keep your process up and running, no matter what the conditions may be.

Proven Technologies

With nearly a century of experience in the design and manufacture of electric heaters and controls, Chromalox has a proven track record for innovation in advanced thermal technologies. Chromalox engineers have adapted tried and true technology to some of the world's harshest environments like deep-water offshore drilling platforms, gas turbine compartments and petrochemical chlorination units.

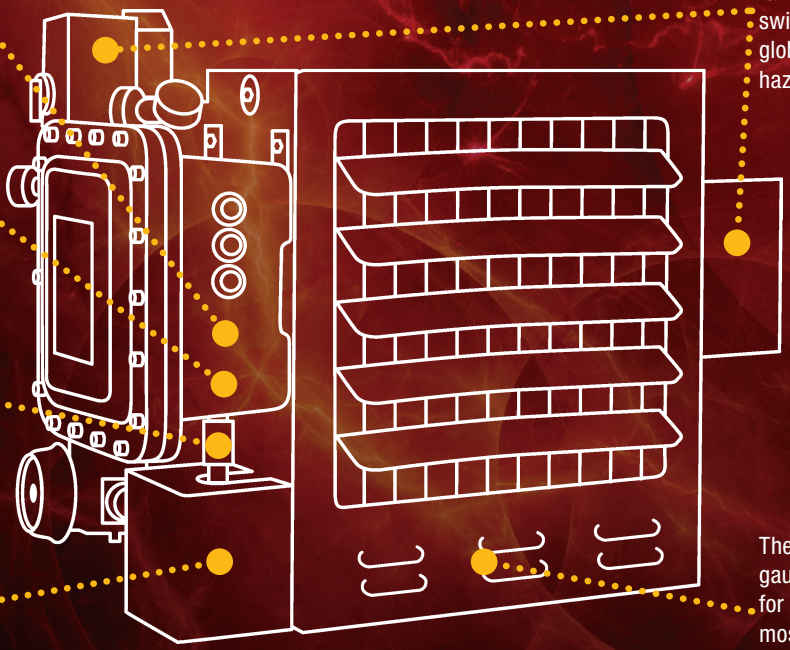
Safe, Reliable Operation in Extreme Conditions

Having been tested in the most severe conditions, XtremeDuty™ products are proven to operate continuously, 24 hours a day, 7 days a week, with virtually no maintenance required. They also perform at nearly 100% efficiency for the products lifespan, ensuring superior performance for your operations.

With XtremeDuty™ solutions, we make sure that your work environments are safer, more reliable, require less maintenance and save you money in the long run.

ENGINEERED FOR EXTREME ENVIRONMENTS AND PROCESSES

EXAMPLE OF AN XTREMEDUTY™ PRODUCT - MODEL CXHXD



Critical in hazardous areas, the motor and enclosures are epoxy painted, at a minimum IP56 and feature optional designs down to -55°C.

A corrosion- and heat-resistant coating protects the high-efficiency heat exchanger from harsh environments.

Connections between enclosures use the latest seal technologies to conform to hazardous location requirements and offer superior ingress protection.

The heating element end seal is intelligently engineered with Chromalox DriMeg™ technology to be moisture resistant and reduce the threat of failures.

Optional accessories, such as a factory installed thermostat, fan-only switch, and disconnect switch are certified to the latest global ingress protection and hazardous location standards.

The heater enclosure is heavy gauge 316SST with an option for epoxy paint, providing the most rugged protection against corrosion and weathering.

EXTREME ENVIRONMENTS

PROCESS MANAGEMENT IN HAZARDOUS LOCATIONS

CHALLENGES

Maintaining the viscosity in piping is critically important.

Piping in hazardous locations requires heating equipment that is specifically designed to meet stringent third-party certifications, including ATEX, IECEx, UL, Factory Mutual (FM) and Canadian Standards (CSA).

Chromalox XtremeDuty™ HSRL heat trace cable controlled by an ITC Digital Heat Trace Controller lets you control multiple runs from a single point with the proper hazardous location certifications.

FREEZE PROTECTION IN WET, CORROSIVE ENVIRONMENTS

CHALLENGES

A manufacturer of wastewater/stormwater processing equipment is developing a new automated system to transfer solids from wastewater.

Flexible augers are often housed in unheated buildings where freezing climates could potentially cause problems on start-up.

SOLUTION

Chromalox XtremeDuty™ freeze-protection solution incorporates hazardous area-approved heat trace with corrosion-resistant jacketing and a DTS-HAZ thermostat for reliable, risk-free system control.

REDUCING START-UP TIME IN LOW TEMPERATURES, -55°C (-67°F)

CHALLENGES

Electric heating equipment operating in arctic environments is subject to incredibly harsh conditions.

Stresses put on the equipment by temperature fluctuations from cold start-up to operating mode can cause cracks in materials, leading to failure.

SOLUTION

Chromalox XtremeDuty™ CXHXD unit heaters are designed with proven materials specifically engineered for frigid temperatures.

HEAT TRACE

HEAT TRACE CONTROLLERS

Model ITC line or ambient sensing controller for use in hazardous locations

HEAT TRACE CABLE

SRM/E-CT Cable for use in hazardous locations

AMBIENT AND LINE SENSING THERMOSTATS

Model DTS-HAZ digital thermostat for use in hazardous locations

INDUSTRIAL HEATERS

UNIT HEATERS

Model CXHXD Corrosion-Resistant unit heater for use in hazardous locations

UNIT HEATERS

Model HD3D Corrosion-Resistant and Wash-Down unit.

EXTREME PROCESSES

HIGH-PRESSURE GAS HEATING

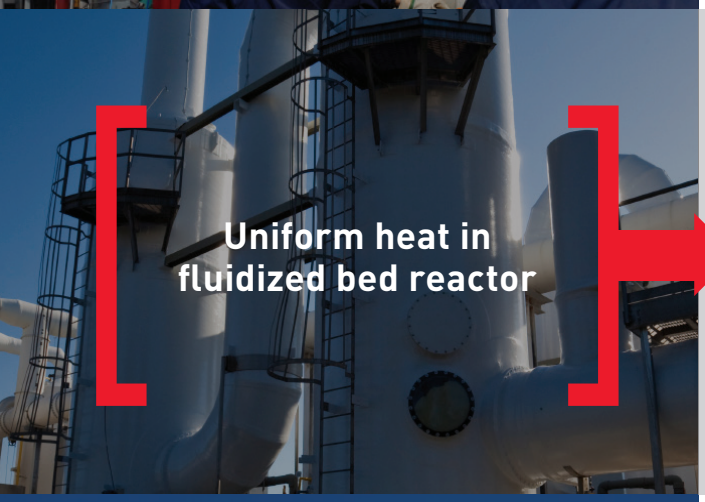
CHALLENGES

An integrator of centrifugal compressor equipment must provide high-pressure dry gas to the compressor seal.

Gas compressors in areas with minimal space require a compact solution that can operate in a hazardous location.

SOLUTION

Chromalox XtremeDuty™ CCX high-pressure cast-block circulation heater's compact size allows for easy installation, while its robust design handles high pressures (up to 3,500 psi/241 bar) and enables precise control for optimal moisture-removal temperature.



HIGH-TEMPERATURE PROCESS HEATING

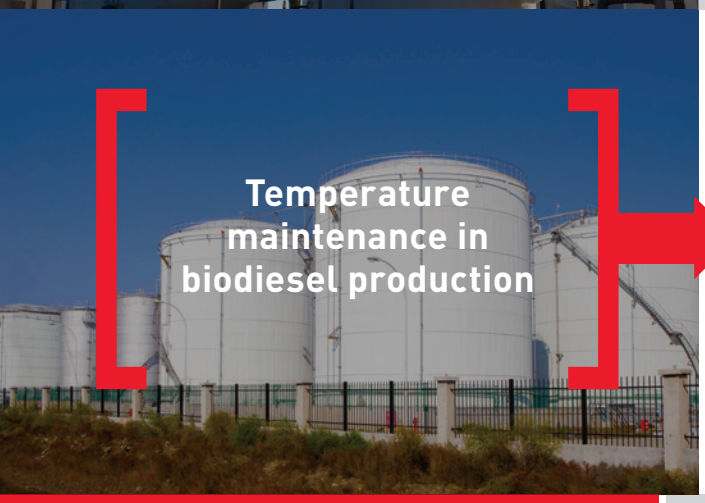
CHALLENGES

A manufacturer of fluidized bed reactors requires a means of reliably heating their process to temperatures of up to 1500°F (815°C).

The critical process requires uniform heat in a small space.

SOLUTION

Chromalox XtremeDuty™ MaxiZone insertion heaters can be placed in a drywell (metal tube) filled with a metallic media. Because of its high-temperature design and excellent heat-transfer properties, the MaxiZone element maximizes the heat placed in the process with minimal footprint.



HAZARDOUS LOCATION ENCLOSURE HEATING

CHALLENGES

A customer requires biodiesel to flow properly through piping in a metering station. The biodiesel can become too viscous if its temperature drops below a certain threshold. The potential presence of volatile fumes adds to the complexity of the application, requiring equipment to be suited for hazardous locations.

SOLUTION

To solve the application, Chromalox can provide the XPMC enclosure heater to maintain the piping temperature within the metering enclosure. The XPMC features a rugged design, has a hazardous location rating and is available with a built in thermostat.

& SYSTEMS

COMPONENT TECHNOLOGIES

CIRCULATION HEATERS

Model CCX cast-block circulation heater for high-pressure applications

TANK HEATERS

Model LTFX replaceable element tank heater for hazardous locations

INSERTION HEATERS

Model MZ MaxiZone multizone insertion heater for high-temperature applications

ENCLOSURE HEATERS

Model XPMC enclosure heater for use in hazardous locations

STRIP HEATERS

Model AEPS strip heater for use in hazardous locations

Certifications & Testing

An integral advantage of the Chromalox XtremeDuty™ products line is its third-party certifications and listings, including ATEX, CE, IEC, IECEx, ASME, DNV, UL, FM and CSA. Chromalox also has the most product listings for extreme applications in the industry and has acquired multiple facility certifications that enable us to self-certify many of our heater and control products.

Chromalox labs are UL/CSA-certified and approved to conduct third-party in-house testing.

Tests that XtremeDuty™ products undergo include:

- Extreme temperature (-55°C up to 130°C ambient) testing through environmental test chambers
- Material defect and failure testing using specialized X-ray equipment
- Hydro testing to ensure capability with handling high levels of pressure up to 10,000 psi (690 bar)
- Explosion and corrosion testing through relationships with Intertek, LCIE, TUV, UL, CSA and KEMA
- Reliability testing through pass/fail (dielectric breakdown), performance (airflow) and endurance (motor) testing
- Life-cycle testing
- Humidity and moisture testing

RedSage™ Unmatched Engineering Capability

Over the past century, Chromalox has developed proprietary technologies and manufacturing systems for the electric heating industry, while our engineers have designed electric heating solutions for countless industrial applications. Drawing on more than 100 years of institutional learning, hundreds of thousands of designs on file and leveraging industry-leading proprietary design software Chromalox is able to provide best-in-class products with the most value and the shortest lead times.

We call this knowledge base RedSage™. RedSage provides:

- Design modeling and simulation for research and development.
- Process and application design systems for estimating and quoting.
- Product life cycle management.
- Product design systems to speed engineering to production handoffs.

Using RedSage-supported designs and tools, Chromalox can be nimble during the design phase of a project to quickly address our customers' changing requirements.

Technical and Service Support

Chromalox Service Solutions offer full support for Chromalox ExtremeDuty products to ensure optimal performance, directly extending product life. Service technicians are available any time, day or night, to assist with all process heating needs—from start-up and commissioning to emergency service, training and scheduled maintenance visits and technical support.

The Chromalox Difference

Since 1917, Chromalox has been the world's leading advanced thermal technologies innovator. Founded by an engineering pioneer, Chromalox invented electric heating technology and created an entire industry. To put it simply, we've been doing it better and longer than anyone else.

Chromalox continues to create new thermal technologies that shape the future of industrial heating. Our Heat Trace segment delivers temperature management solutions for piping systems, valves and tanks. Our Industrial Heaters and Systems segment delivers process heating solutions for revenue-generating industrial processes. And our Component Technologies segment delivers component heating solutions for industrial equipment manufacturers.

Chromalox partners with customers to provide the optimal electric heat and control solutions for the most demanding and complex heating challenges. Your processes will benefit from our century of experience, global footprint and the most comprehensive set of technologies in the industry. We work with you to exceed expectations and specifications, providing optimal solutions that install efficiently, limit risk, improve operating costs and require minimal design iterations. No thermal project is too large or too complex.

XTREME FLEXIBILITY

All XtremeDuty™ products can be designed for the specific needs of your system or application. Whether the challenge is a confined space for a heating element or specialized conditions brought on by climate and process, XtremeDuty™ products can be implemented to meet the requirements of your unique application.

CHROMALOX WORLDWIDE LOCATIONS

Chromalox Headquarters

103 Gamma Drive
Pittsburgh, PA 15238
USA

Phone: (412) 967-3800
Fax: (412) 967-5148
Toll-Free: 1-800-443-2640

email: sales@chromalox.com
www.chromalox.com

Canada Fax: 888-292-9607	Tel: 877-238-4754 www.chromalox.com	email: sales@chromalox.com
China Fax: +86 (0) 21-5866-8803	Tel: +86 (0) 21-5866-8802 www.chromalox.cn	email: shanghai.office@chromalox.com
France Fax: +33 (0) 3 23 74 39 00	Tel: +33 (0) 3 23 74 39 39 www.chromalox.fr	email: ventes@chromalox.fr
Germany Fax: +49 (0) 231-58 44 990-9	Tel: +49 (0) 231-58 44 990-0 www.chromalox.de	email: Kontakt@chromalox.com
Middle East Fax: +971 4 8879793	Tel: +971 4 8879776 www.chromalox.com	email: middle-eastsales@chromalox.com
India Fax: +91-11-25623480	Tel: +91-11-25623134 www.chromalox.in	email: indiasales@chromalox.com
Singapore Fax: +65 (0) 6339 2648	Tel: +65 (0) 6339 1228 www.chromalox.com	email: singaporesales@chromalox.com
Thailand Fax: +66 (0) 38 190919	Tel: +66 (0) 38 190916 www.chromalox.com	email: asiasales@chromalox.com
United Kingdom Fax: +44 (0) 20 8689 0571	Tel: +44 (0) 20 8665 8900 www.chromalox.co.uk	email: uksales@chromalox.com

CHROMALOX
Advanced Thermal Technologies

PX136
5/16