



*closing the loop on thermal solutions*



## ***Process Heaters***

***Electric Process Heating, Temperature Sensing & Control***



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**GORDON HATCH CO. INC.**  
*—Representing quality products since 1941*

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**Durex Industries** closes the loop on thermal solutions for industrial processing. Since 1980, Durex has developed and expanded its temperature sensing, electric heating and controls products offering. We have tackled some of the most difficult thermal challenges from aerospace to analytical instrumentation, from food equipment to plastics processing, from medical devices to semiconductor processing. We provide an extensive line of solutions from simple, standard designs to custom engineered, complex heating, sensing and control solutions.

## **Durex Capabilities**

### **Applications Driven**

We don't throw canned, stock solutions at the problem. We work to thoroughly assess your specific application needs, develop solutions and provide the best alternative to meet or exceed your application requirements.

### **Fast Response**

Durex Industries has a large assortment of stock and standard designs with a host of options to provide customers same day delivery or within one to two weeks of order placement. Our rapid turn prototype capabilities allow us to quickly go from concept to putting the solution in your hands. We rapidly assess situations and respond quickly to meet the challenge.

### **Robust Solutions**

We provide one of the best values in the industry. Time-tested sensing, controller and heater products are engineered to perform reliably for many years to come. Testing and quality control are used to ensure the performance and reliability of our products; among others:

- Die Penetrant
- Hydrostatic Pressure
- PMI
- Helium Leak
- Radiography
- NIST Sensor Calibration





***Innovation***

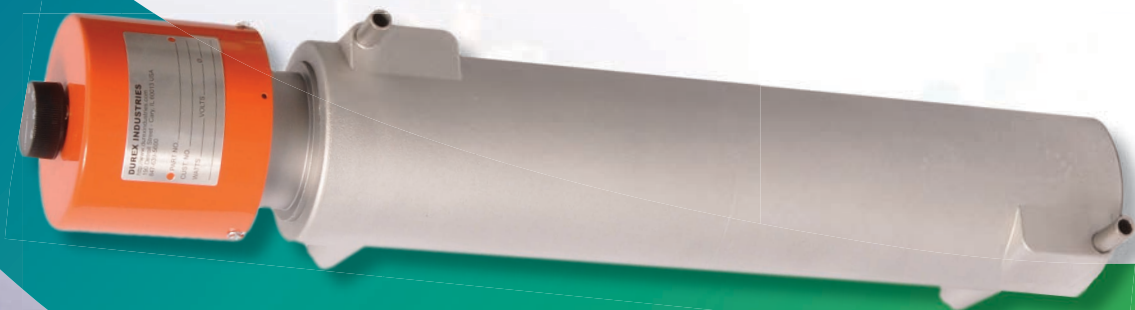
At Durex Industries, our mantra has always been “Durex Can!” We develop innovative solutions for specific customer needs as well as product lines that meet a wider variety of application requirements.

The **DFX™** Series of electric cast circulation heaters are our latest addition to the Durex Industries family of process heating products.

***NEW!***

***DFX™ Cast Circulation Heaters***

*Durex Industries' New Circulation Heating Solution is an innovative alternative to traditional circulation heaters. A high pressure 316SS flow path is embedded with heater elements in a light weight aluminum casting to provide excellent thermal response and control. The indirect heating of the flow media is ideal for heating viscous and temperature sensitive fluids such as paints, coatings and oils. Passivated and electropolished option enables contamination-free heating for de-ionized water, solvents, gases, and analytical samples.*



***closing the loop on thermal solutions***

## Direct Immersion Heaters

Durex Industries has over 30 years of experience in the application and design of robust tubular immersion heaters and process assemblies. We have an extensive range of stock and standard designs for quick field replacements and convenient ordering. Durex also has extensive experience with custom designed immersion heaters for tank, reservoir and circulation flow applications. Capabilities include:

- Temperatures to 1400°F (760°C)
- Watt densities to 120W/in<sup>2</sup>
- Fittings/Flanges in brass, steel, 304SS & 316SS
- Copper, steel, 304SS, 316SS & Incoloy® sheaths
- Inconel®, titanium, other materials available
- UL® component recognized
- Thermostat and sensor options
- NEMA 1, 4, 4X, and 7 enclosures

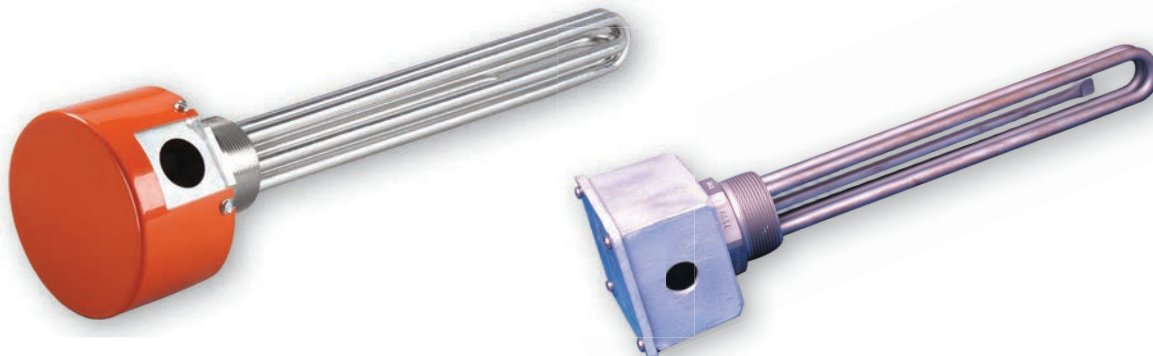
**Flange heaters** are typically used for larger volume and higher power applications or where flange tank or pipe vessel connections are preferred. Tubular heater elements are brazed or welded to the flanges for convenient mounting.



### **Parts Cleaning and Finishing**

Durex expertise ensures the right combination of heater watt density and sheath materials to minimize the effects of heating contaminated, aggressive chemicals and cleaning solutions.

**Screw plug heaters** are used in almost every liquid heating application imaginable. The threaded fittings allow for easy tank insertion and removal. Tubular heater elements are brazed or welded to NPT fittings for easy mounting.



**Over-the-Side heaters** are designed for the robust requirements of corrosive chemicals, viscous (potentially contaminated) fluids, and rinse and process water heating. Various configurations of tubular heater element assemblies provide convenient tank side mounting. As required, heaters are constructed with risers, junction boxes and element support legs.

- Operating temperatures to 600°F (315°C)
- Watt densities to 60W/in<sup>2</sup>
- Copper, steel, 304SS, 316SS, Incoloy®, Inconel®, titanium and PTFE materials available

**Immersion  
Heater  
Applications:**



- Boilers & Water Heating
- Clean & Process Water
- Freeze Protection & Winterizing
- Heat Transfer Systems
- Lube & Fuel Oil Heating
- Parts Cleaning Solutions
- Plating & Finishing Chemicals
- Temperature Control Units
- Wash Systems
- Wax Heating



## Circulation Heaters

**Flange and Screw Plug** circulation heaters are available in many stock and standard designs. These are complemented by Durex experience in custom engineered solutions. We have experience in a wide variety of applications from water, oils, and steam to chemicals and hydrocarbon gases. We carefully engineer sheath and vessel materials to the application using appropriate watt densities to maximize life, yet minimize footprint.

- Temperatures to 1400°F (760°C)
- Watt densities to 100W/in<sup>2</sup>
- Up to 600 volts; up to 1 MW+
- Fittings and flanges from 1" to 30"
- Copper, steel, 304SS, 316SS & Incoloy® sheaths
- Standard, seamless & heavy wall elements
- ASME Section VIII code stamp
- Insulation
- Passivation and special cleaning
- NEMA 1, 4, & 7 enclosures
- Thermostat or sensors
- Inconel®, titanium, other materials available



### **Circulation Heater Applications:**

- Dry-well tank heaters
- Oil suction heaters
- Fuel oil preheaters
- Lubrication & conditioning system
- Heat transfer system
- Steam superheating
- Air and similar gases
- Catalyst (re)activation & dehumidification
- Hydrocarbon gases





**Engine Heaters** keep emergency generator engines warm for quick starting. These custom engineered heaters use heavy duty construction including steel or Incoloy® heater elements in fully welded circulation tanks for years of reliable service.



## **NEW!** **DFX™** *Cast Circulation Heaters*

*Durex Industries' newest innovation, the **DFX™** Cast Circulation Heaters provide fast, safe and effective heating of fluids.*

A seamless, heavy wall 316 stainless steel flow tube along with the heater elements are embedded in a light weight aluminum casting. Along with fast thermal response and excellent controllability, indirect heating of the flow media is ideal for viscous and temperature sensitive fluids such as oils, coatings, resins and solvents. Passivated and electropolished designs are perfect for supercritical cleaning applications, de-ionized water, and other clean applications.

- Temperatures to 200°C (390°F)
- Pressure > 3,000 psi (205 Bar)
- Up to 480 V; up to 40kW
- UL® component recognized
- Thermostat and sensor options
- Passivated / electropolished option
- NEMA 1, 4, 7 and ATEX enclosures
- Heat/cool option





## Duct Heaters

Rugged Durex duct heaters are well suited for the needs of many heavy duty industrial applications. We only use tubular heater elements for long life and durability. We construct high tensile strength cages to support heater elements in larger, higher temperature units to ensure proper performance. The optimal sheath material and maximum allowable watt densities are used to minimize size, weight and footprint. Replaceable element designs as well as modular “bank” type designs are available.

- Operating temperatures to 1400°F (760°C)
- Watt densities to 40W/in<sup>2</sup>
- 304SS & Incoloy® sheaths
- UL® component recognized
- Process and high limit sensors
- NEMA 1, 4 enclosures



### **Duct Heater Application Tips**

The most common problems Durex encounters in the field are a lack of proper system control and poorly designed heater elements. Durex always recommends fast firing SCR power controllers to reduce heater thermal cycling. Durex also uses heavy gauge resistance wire and conservative heater watt densities in its heaters to vastly extend life and improve performance.

### **Common Applications**

- Convection Furnaces
- Core & Refractories Drying
- Convection Drying Systems
- Inlet Air & Flue Gas Heating
- Dehumidification
- Load Banks







## Process Heating Systems

Durex provides process heating systems for customers who are looking for assembled or packaged heating solutions. We can provide a skidded and interconnected heater and control panel systems. Durex can also integrate sensors, switches, valves, piping, etc. into the package as required.

We provide the following capabilities:

- Skidded & piped multi-heater sets
- Interconnected heater / control panel skids
- Integrated instrumentation such as sensors, switches, etc.
- Valves, piping, pumps, tanks
- Hazardous location compliance



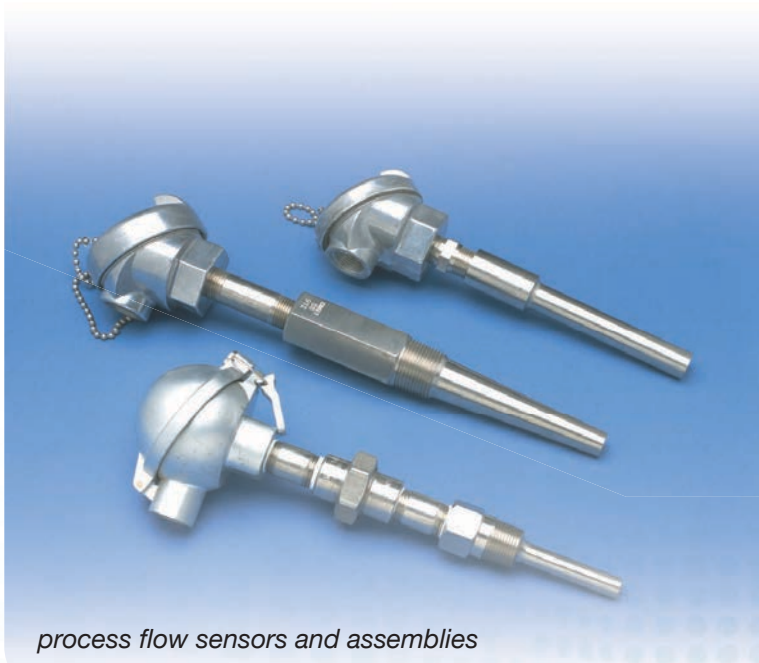
## Process Temperature Sensors

Durex Industries applies its industrial experience and technical expertise to manufacture a complete line of thermocouple & RTD sensors. We have a wide variety of products suited for use in furnace applications, industrial processing as well as sanitary sensors for the food and beverage industry. Stock and standard design sensors provide same day deliveries. Custom engineered sensor probes and assemblies can tackle the toughest industrial process and OEM applications.

- Temperatures from -320°F to 3000°F (-195°C to 1650°C)
- All standard calibrations
- Stock and standard designs for quick delivery
- Beaded and mineral insulated designs
- Sanitary RTD sensor assemblies
- Connection heads and transmitters
- Thermowells and protection tubes
- Teflon coated probe capability



*sensors for ferrous and non-ferrous metal applications*



*process flow sensors and assemblies*



*thermocouple and rtd probes*





## Control Consoles and Panels

**Durex E-Series Control Consoles** integrate temperature controllers, power switching devices, power connectors, fuses, sensor connectors and other electro-mechanical devices into a compact system. The integration of discrete components into a complete self-powered turnkey system saves design and manufacturing cost, while providing a robust, reliable temperature control system for many applications.



**Durex Control Panels** meet a wide variety of industrial requirements by providing an extensive line of standard and custom engineered solutions. All panels are fully pre-wired and tested at the factory and come with a set of drawings including schematics and I&M manuals. Standard panels include NEMA 12 enclosure, main power disconnect, process temperature controller, pilot lights, panel labels, primary and secondary fusing, and ventilation fan /filter (if required).

Among the many options are:

- UL® 508 listing
- High limit controller
- NEMA 4, 4X or 7 enclosure
- Meters and chart recorders
- Lamps and annunciators
- Circuit breakers
- Enclosure heater
- Air conditioning
- Multi-zone control
- Hazardous location ratings
- Solar and drip shields
- Touch-screen HMI
- PLC





## ***About Durex Industries***

Founded in 1980 by Ed Hinz, CEO & President, Durex Industries is a privately owned thermal solutions company specializing in electric heaters, temperature sensors, and temperature controls. Durex's 145,000 sq. ft. business, engineering, and manufacturing center is conveniently located 25 miles northwest of Chicago in Cary, Illinois.

Since our founding, providing customers with reliable products and excellence in all aspects of the business have been the hallmark of Durex and the basis of our name. "Dur" means durable and "ex" means excellence. Durex Industries, an ISO-9001 registered company, supplies engineering and manufactures thermal solutions for most global industrial equipment markets, including food service, life sciences, packaging, photovoltaic, plastics, process, and semiconductor. Our focus on lean design, manufacturing, and business systems continues to provide customers with the best design and product value in our industry.



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