

## GCHI & Series

### Steam, Air & Gas Applications

- **Screw Plug or Flange Heater Design**
- **2 - 18" Carbon Steel Pipe Body, 150 Lb Construction**
- **1 - 350kW**
- **120, 240 and 480V, 1 & 3 Phase**
- **General Purpose, Moisture Resistant Terminal, Moisture Resistant/Explosion Proof Enclosure**
- **0.475" Dia. INCOLOY® Sheath Elements (15 - 23 W/in<sup>2</sup>)**
- **With & Without Thermostat**
- **CSA and Other Third Party Approval, Listing or Certification Available on Many Models**

#### Applications

**Air and Gas** — Chromalox circulation heaters provide a cost effective means for heating air and common industrial gases such as Argon, Helium and Nitrogen as well as gaseous mixtures for a wide variety of industrial processes.

**High Temperature Gas** — Refer to Stainless Steel circulation heaters later in this section.

**Steam Superheating** — Chromalox circulation heaters are used to increase the enthalpy and quality of steam. Smaller units can be used to make up line losses in steam generating and distribution systems.

#### Features

**Terminal Enclosures** — Standard stock heater terminal enclosures are E1 General Purpose. Moisture Resistant/Explosion Proof E2 and Moisture Resistant E4 Enclosures are available as assembly stock.

**Elements** — Sturdy 0.475" diameter INCOLOY® sheath elements permit higher watt densities and operating temperatures. Steel sheath elements may be used in low temperature applications. Chromalox elements utilize high quality resistance wire for coil construction. The coil is surrounded with high purity magnesium oxide which is compacted to a dense solid to ensure high thermal conductivity and dielectric strength.

**Flanges** — Carbon Steel Flanges are standard on low to medium temperature heaters 3" and larger. Flange dimensions conform to ANSI B16.5 standards.

**Vessels** — Chromalox vessels consist of a pipe body, nozzles and end cap. The pipe body and nozzles are ASTM A53B carbon steel pipe. The end cap or disk is ASTM A516 Grade 70 carbon steel plate. Mounting lugs are welded to the pipe wall. The vessel is wrapped with thermal insulation and covered with a painted sheet metal jacket.

**Baffle Assemblies** — Internal baffle assemblies are provided on some stock circulation heaters. Baffles reduce the internal cross sectional area thereby increasing the velocity of the gas. Increasing the gas velocity reduces the operating temperature of the elements and the shell of the vessel.

**Wiring** — Wiring terminals are spaced to provide proper arcing and creepage clearances. Termination insulators provide electrical isolation between the terminals and the grounded metal sheath to enhance personnel safety and equipment service life. Heavy duty jumper straps and other terminal parts assure tight connections and an extra margin of current carrying capacity.

**Control Thermostats** — All Series 3 and 6 stock and assembly stock heaters come equipped with mechanical AR thermostats.



These thermostats are suitable for small size gas heaters and provide low cost control in low and medium temperature applications. Explosion-resistant and liquid-tight thermostats are provided on E2 and E4 units, respectively.

**Precision Temperature Control and Control Panels** — For larger kW gas heaters and precise control of gas temperatures in high temperature applications, Chromalox recommends the use of thermocouple sensors, electronic PID temperature controls and SCR power panels for gas heating applications. The use of electronic and SCR controls will minimize overshoot and reduce the possibility of heater damage from overtemperature operation. Integral or remote mounted control panels with electronic controls and solid state (SCR) or contactor power controllers can be provided using virtually any combination of control devices. Consult the Controls section for details.