



Circulation heater, also referred as "inline heater", which are used for heating flowing liquids, air, and gases. Non-pressurized or highly pressurized fluids can be heated very effectively using indirect circulation heating. A wide variety of standard designs and custom engineered power ratings, sizes, flow capacities, and options are available to fulfill any application needs. Circulation heater are the perfect solution for generating heat and enhancing normal immersion heaters performance. They are designed to heat pressurized circulating fluids to provide effective, controlled heating to water, oil, steam and other gases. Circulation heater are composed of all-in-one units with a heater mounted

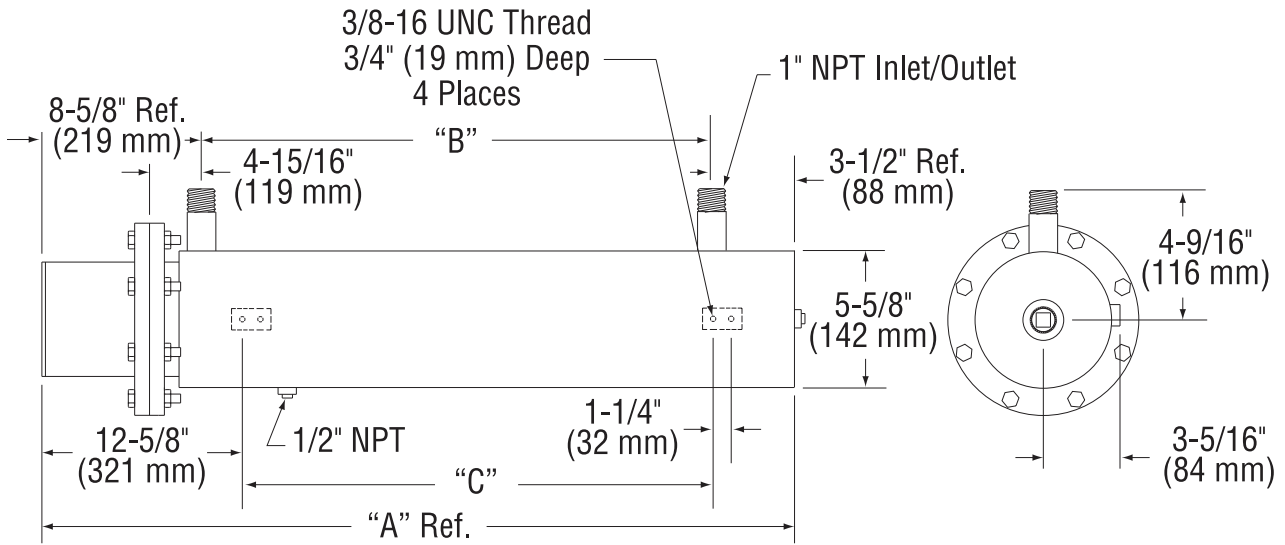
inside an insulated tank. They are made of a flanged or a screw plug immersion heater that is inserted into a pressure vessel or a pipe body. Inlet and outlet nozzles in the vessel permit liquid or gas flow into and out of the circulation vessel. The standard design circulation heater use standard screw plug and flange immersion heater to allow for easy replacement and retrofit. Custom units can be designed to suit.

## Application

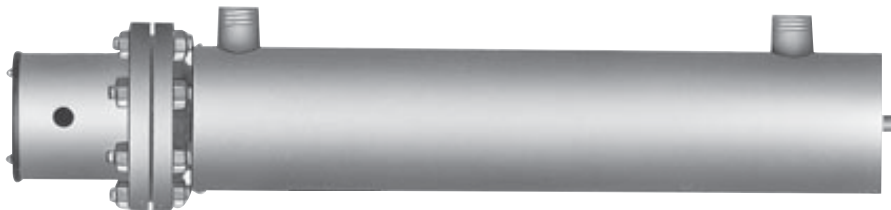
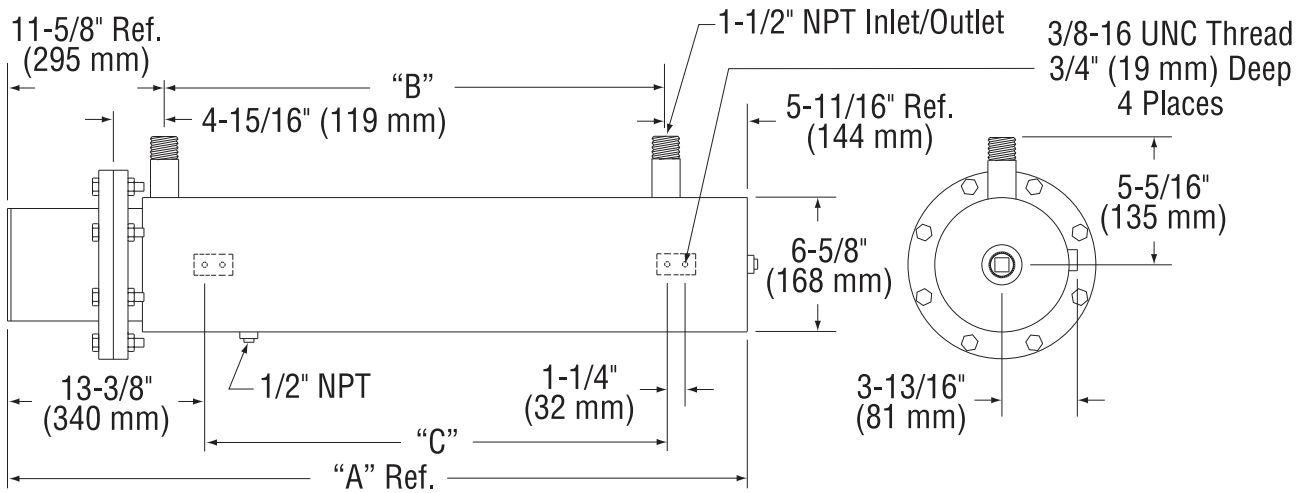
An electric process circulation heater is used as a conduit to facilitate the flow of process fluid directly over heating elements. Circulation heater heat a variety of fluids from high-temperature gas to hard and heat liquids. The heating elements, vessel, terminal connections, and mounting structures are packaged for quick installation. Heaters may be installed horizontal, vertical or even sloped for vaporizing liquids.

- Air and Similar Gases
- Catalyst (re)Activation & Dehumidification
- Caustic Solution Heating
- Storage Tanks
- Fuel Oil Preheaters
- Heat Transfer Systems
- Hydraulic and Heat Transfer Oils
- Hydrocarbon gases
- Lube Oil & Fuel Oil Heating
- Lubrication & Conditioning Systems
- Oil Suction Heaters
- Process Air & Gas Heating
- Process Chemical Reactors
- Steam Superheating
- Water-Glycol Solution Heating

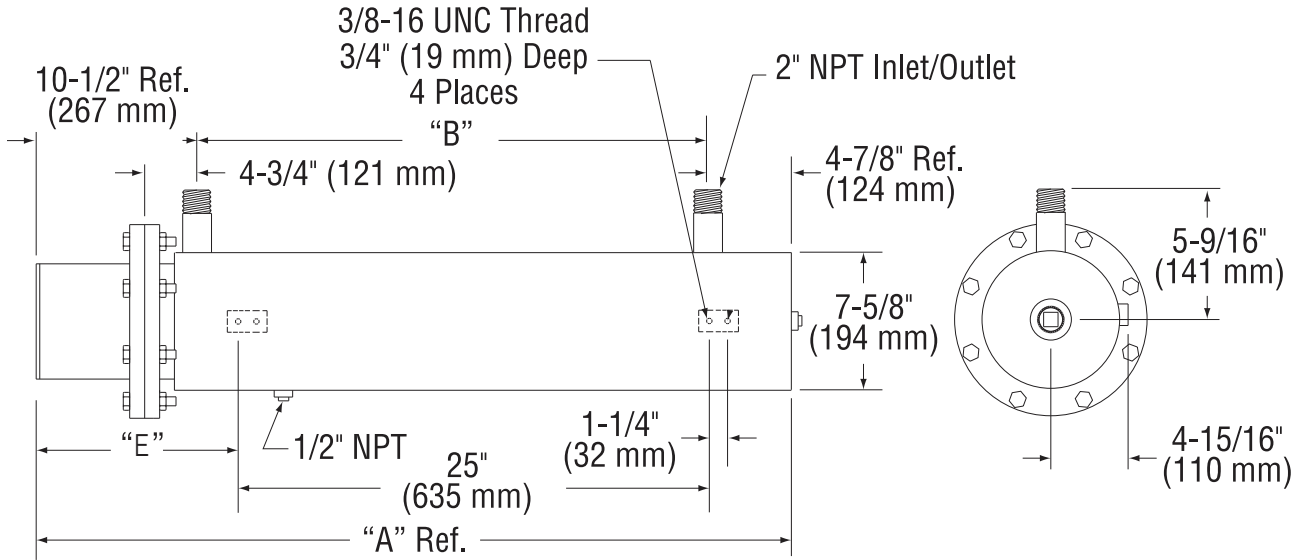
**Standard 3" Flanged Circulation Heater Dimensions**



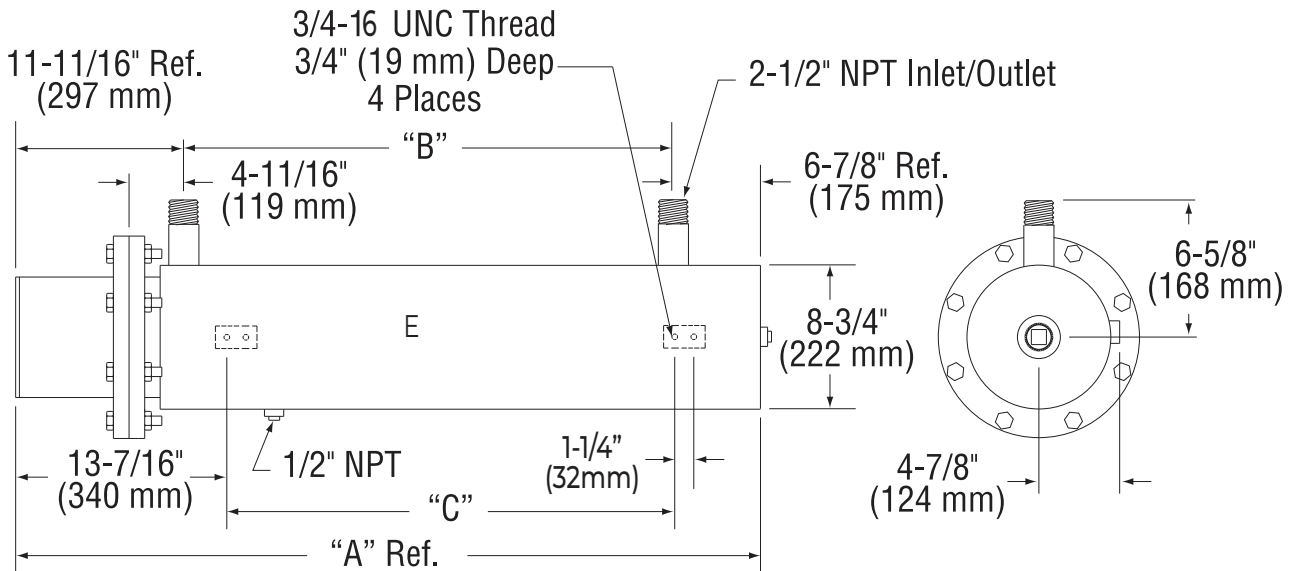
**Standard 4" Flanged Circulation Heater Dimensions**



**Standard 5" Flanged Circulation Heater Dimensions**



**Standard 6" Flanged Circulation Heater Dimensions**



## Material Sheath Selection

### Standard

#### Incoloy 800

A Nickel (30-35%), Chromium (19-23%), Iron alloy. The high nickel content of this alloy contributes to its resistance to scaling and corrosion. Used in air heating (also see Incoloy 840) and immersion heating of potable water and other liquids that are not corrosive to an Incoloy 800 sheath.

#### Low Carbon Steel

Applications include fluid heat transfer media, tar, high to low viscosity petroleum oils, asphalt, wax, molten salt, and other solutions not corrosive to a steel sheath.

#### Stainless Steel 316

A Chromium (16-18%), Nickel (11-14%), Iron Alloy with Molybdenum (2-3%) added to improve corrosion resistance in certain environments, especially those that would tend to cause pitting due to the presence of chlorides. Applications include deionized water.

#### Copper

Mainly used in clean water heating for washrooms, showers, rinse tanks and freeze protection of storage tanks.

### Optional

#### Stainless Steel 304

A Chromium (18-20%), Nickel (8-11%), Iron Alloy used in the food industry, sterilizing solutions, air heating and many organic and inorganic chemicals.

#### Stainless Steel 321

A Chromium (17-20%), Nickel (9-13%), Iron Alloy modified with the addition of titanium to prevent carbide precipitation and the resulting intergranular corrosion that can take place in certain mediums when operating in the 800-1200°F (427-649°C) temperature range.

#### Incoloy 840

A Nickel (18-20%), Chromium (18-22%), Iron alloy. Incoloy 840 has about 10% less nickel than Incoloy 800. Used in many air heating applications where it has exhibited superior oxidation resistance at less cost than Incoloy 800.

#### Incoloy 825

A Nickel (38-46%), Chromium (19.5-23.5%), Molybdenum (2-3%) Iron alloy.

# Customised Design And Engineering For Process Heaters



Dpstar is manufacturing company developing electric heating products. With uncompromised dedication to our customers, we offer solutions and just not products. Our development in oil and gas industries, renewable energy, HVAC system and government projects help customer like you to get alternative solutions for your projects to get off the ground in the most cost efficient way.

## Our Clients

