

# Circulation Heaters



## STARFLOW™ Heaters

The STARFLOW™ circulation heater is engineered to heat a flowing gas stream to 1000°F (537°C). The 316L stainless steel chamber houses a small diameter sheathed element, which allows for quick response to both heat-up and cool down cycles.

Watlow's starwound, coiled cable heater provides extremely efficient and reliable heating by maximizing the contact area of the gas or fluid with the element. Because the element is sheathed, the unit can operate in gas streams requiring a clean environment as well as atmospheres containing contaminants and moisture. This provides superior performance compared to units with internally exposed or open element wires.

### Performance Capabilities

- Temperatures up to 1000°F (537°C), 316L stainless steel sheath
- Maximum watt densities up to 30 W/in<sup>2</sup> (4.7 W/cm<sup>2</sup>)
- Maximum voltage up to 240V

### Features and Benefits

#### Small diameter heater

- Allows for quick response time

#### Internal starwound element

- Provides fast, efficient heating

#### Sheathed element

- Provides the ability to heat in clean or impure streams

#### Flexibility in configurations

- Allows for adaptability to any process

#### 316L stainless steel

- Provides a rugged and corrosion resistant construction

#### Electropolishing available on all wetted surface

- Reduces particulate contamination

**Note:** Contact your Watlow representative for ultra-high purity applications

#### Low pressure loss

- Minimizes flow restriction

**Note:** Not suitable for use as a pressure vessel

#### Type J or K thermocouples

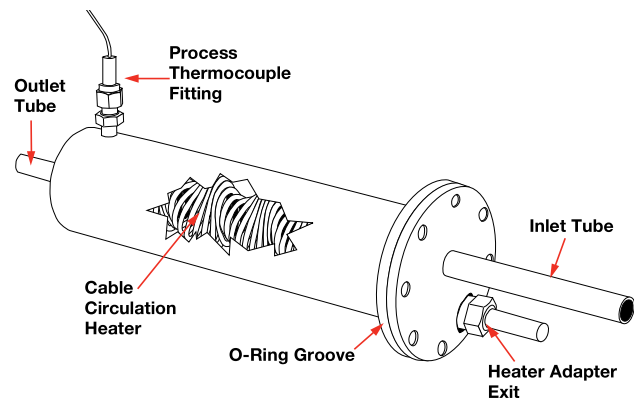
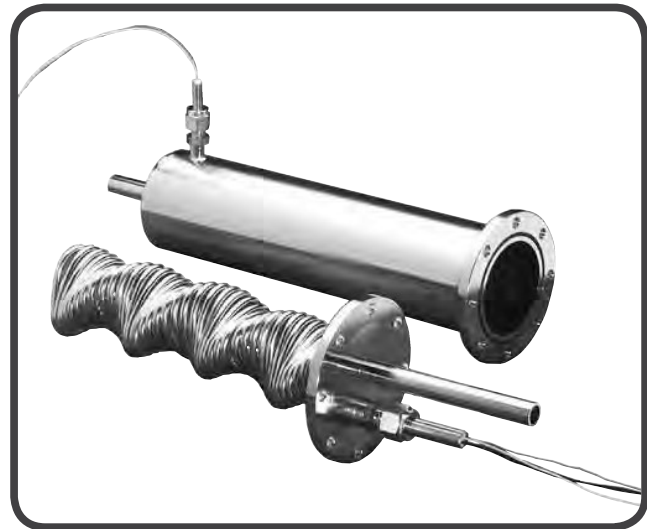
- Provide precise control and high-limit safety

#### Replaceable heater and thermocouple

- Reduces replacement cost

#### Shipment from stock

- Reduces downtime



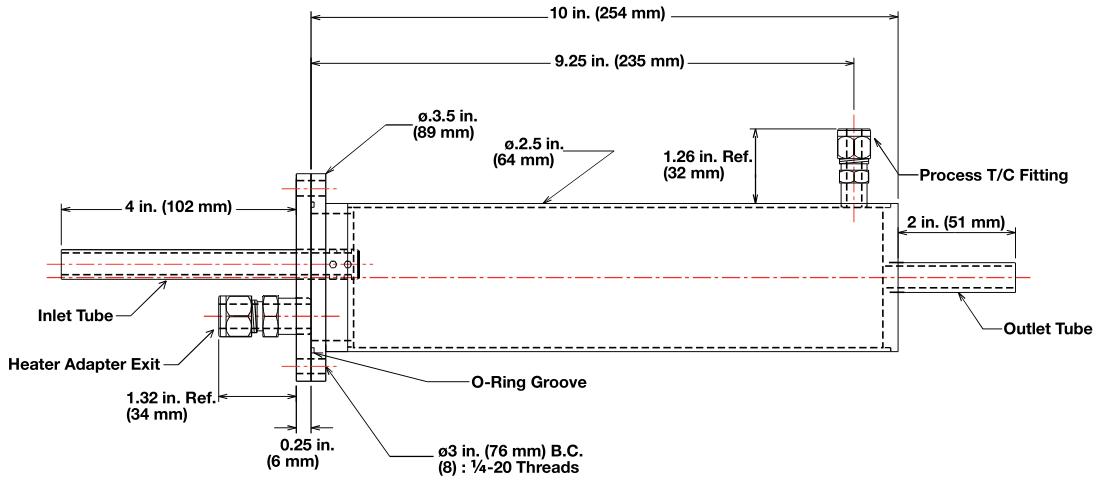
### Typical Applications

- Semiconductor processing
- Curing and drying
- Electronics
- Heat shrinking
- Thermoforming/sealing

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### Ordering Information

#### Part Number

①	②	③ ④	⑤ ⑥	⑦ ⑧ ⑨ ⑩	⑪	⑫	⑬	⑭
C	H	Type of Inlet	Type of Outlet	Heater Wattage	Internal T/C Calibration (Heater)	Surface Finish of Assembly and Heater	Process T/C Calibration (Assembly)	O-Ring Material

③ ④	Type of Inlet
ET =	1/4 in. (6 mm) O.D. tube
JT =	1/2 in. (13 mm) O.D. tube

⑤ ⑥	Type of Outlet
ET =	1/4 in. (6 mm) O.D. tube
JT =	1/2 in. (13 mm) O.D. tube

⑦ ⑧ ⑨ ⑩	Heater Wattage
0375 =	120V, 375 W
0500 =	120V, 500 W
0750 =	120V, 750 W
1500 =	240V, 1500 W
2000 =	240V, 2000 W
3000 =	240V, 3000 W

⑪	Internal Thermocouple Calibration (Heater)
J =	Type J
K =	Type K

⑫	Surface Finish of Assembly and Heater
X =	Unfinished
E =	Electropolished

⑬	Process Thermocouple Calibration (Assembly)
J =	Type J
K =	Type K

⑭	O-Ring Material
A =	FKM (FPM) 500°F (260°C)
M =	Alloy X750 1300°F (704°C)
T =	PTFE encapsulated FKM (FPM) 392°F (200°C)