The CAST-X 2000 circulation heater from Cast Aluminum Solutions is an ideal heating solution for demanding applications. The CAST-X 2000 heater consists of a helical coiled tube cast into an aluminum body with tubular elements. The aluminum body serves as the heat transfer media between the tubular element and the coiled tube through which the fluid being heated passes through.

The CAST-X 2000 is well suited to applications where fluid cleanliness is critical because the material being heated never comes in contact with the heating elements. This is a performance requirement in many foodservice equipment, semiconductor and analytical markets. The CAST-X 2000 heater comes with a heavy wall seamless stainless steel passageway that assures performance in high-pressure applications up to 4300 psi where viscous or mildly corrosive materials need to be heated.

### FEATURES AND BENEFITS

**Fluid path constructed independent from heater sheath**
- Allows sensitive materials to be heated safely
- Prevents fluid contamination

**Robust cast-in aluminum construction**
- Assures longer heater life
- Provides accurate temperature control

**Integrated thermostat and enclosure**
- Assures easy use and installation
- Allows heater to run dry
- Provides protection in explosive environments

**Standard 316L stainless steel fluid path**
- Ensures material compatibility with many different materials

**Non-welded construction**
- Offers economical package price
- Minimizes potential leakage
- Allows high pressure operation up to 4300 psi with appropriate fittings
- Ensures self draining when mounted vertically

### APPLICATIONS

- Solvent heating
- Diesel and Jet Fuel heating
- Glycol Heating for Heat Transfer Systems
- Sample Heating - Analytical Instrumentation
- Steam Generation
- Food and Beverage Heating - Pasteurization
- Paint Heating
- Two Part Urethane and Foam System Heating
- Air, CO₂ and Nitrogen
- Deionized (DI) Water Heating
CAST-X 2000
Circulation Heater

Ideal where fluid cleanliness, temperature accuracy and wiring

Specifications

(4) 1/4-20, 1/2 in. (13 mm)
depth mounting holes

Tubing - 1/2 in. dia. x 0.065 in.
wall (12.7 x 1.65 mm)

Wetted area - 316 stainless steel

Process tube length - 150 in. (3.81 m)

NEMA 1 metal enclosure

Up to 6000 watts, 3-phase

Max. working fluid pressure - 4300 psi (297 Bar)

Max. working temperatures -
250°F (NEMA 7)
350°F (NEMA 1, NEMA 4)
500°F (NEMA 4 with standoff)

Max. working temperature
with stand-off housing is
500°F (260°C)

Standard Options

NEMA 1, 4 and 7 enclosures
with and without process thermostats

Snap action high-limit thermostat

Insulated body

Process and high-limit thermocouples

Non Standard Options

ATEX explosion-proof enclosures

Passivated or electropolished wetted surfaces

Custom fittings

Custom sensors

Stand-off housing

Wiring

Configurable enclosure / Thermostat Options

<table>
<thead>
<tr>
<th>Description</th>
<th>S2</th>
<th>S5</th>
<th>W2</th>
<th>W5</th>
<th>E1</th>
</tr>
</thead>
<tbody>
<tr>
<td>300A 6000 W, 480V, 3-phase (delta)</td>
<td>2</td>
<td>6</td>
<td>2</td>
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<td>2</td>
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<tr>
<td>300B 2000 W, 480V, 3-phase (wye)</td>
<td>3</td>
<td>7</td>
<td>3</td>
<td>7</td>
<td>3</td>
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<tr>
<td>300C 6000 W, 480V, 1-phase (3 elements)</td>
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<td>5</td>
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<tr>
<td>300D 4000 W, 480V, 1-phase (2 elements)</td>
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<tr>
<td>300E 2000 W, 480V, 1-phase (1 element)</td>
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<tr>
<td>300F 6000 W, 240V, 3-phase (delta)</td>
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<tr>
<td>300G 2000 W, 240V, 3-phase (wye)</td>
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<tr>
<td>300H 6000 W, 240V, 1-phase (3 elements)</td>
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<tr>
<td>300J 4000 W, 240V, 1-phase (2 elements)</td>
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<tr>
<td>300K 2000 W, 240V, 1-phase (1 element)</td>
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<td>300L 1500 W, 240V, 1-phase</td>
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<tr>
<td>300M 1000 W, 240V, 1-phase</td>
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<tr>
<td>300Q 4500 W, 208V, 3-phase (delta)</td>
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<tr>
<td>300R 1500 W, 208V, 3-phase (wye)</td>
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<td>300S 4500 W, 208V, 1-phase</td>
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<tr>
<td>300T 3000 W, 208V, 1-phase</td>
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<td>300U 1500 W, 208V, 1-phase</td>
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<tr>
<td>300N 1500 W, 120V, 1-phase</td>
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<tr>
<td>300P 1000 W, 120V, 1-phase</td>
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</table>

On the drawings below, the dashed lines represent components or wiring supplied by the customer.

1. SPST, 1-Phase
2. SPST, 3-Phase Delta
3. SPST, 3-Phase Wye
4. SPST, 1-Phase
5. DPST, 1-Phase
6. DPST, 3-Phase Delta
7. DPST, 3-Phase Wye
CAST-X 2000
Circulation Heater

PRESURE DROP

Flow Rate, Water (gpm)

Pressure Drop (psi)

<table>
<thead>
<tr>
<th>NEMA</th>
<th>HOUSING WITH SINGLE-POLE THERMOSTAT</th>
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<tbody>
<tr>
<td></td>
<td>4 1/4 in. (108 mm)</td>
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<tr>
<td></td>
<td>6 1/2 in. (166.7 mm)</td>
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<tr>
<td></td>
<td>3/4 in. (19 mm) Conduit Opening</td>
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<tr>
<th>NEMA</th>
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<tbody>
<tr>
<td></td>
<td>5 1/2 in. (140 mm)</td>
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<tr>
<td></td>
<td>4 in. (102 mm)</td>
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<tr>
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<td>3/4 in. (19 mm) Conduit Opening</td>
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<td></td>
<td>5 1/2 in. (140 mm)</td>
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<tr>
<td></td>
<td>5.31 in. (135 mm)</td>
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<tr>
<td></td>
<td>5.06 in. (129 mm) (3X) 1 in. NPT</td>
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<tbody>
<tr>
<td></td>
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<tr>
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<td>2 in. (51 mm)</td>
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CAST - X 2000
Circulation Heater

IDEAL WHERE FLUID CLEANLINESS, TEMPERATURE ACCURACY AND HIGH PRESSURE ARE REQUIRED

DIMENSIONS

ACCESSORIES:
- Compression fitting (high pressure) 274-55-6-5
- Insulation jacket 307-0-11-1

ORDERING INFORMATION
To order, complete the number code with the information below.

Cast-X 2000: 0.5 in. (13 mm) O.D. inlet/outlet, 0.065 in. (1.7 mm) wall seamless 316 SS tubing, NEMA 1 housing

High Limit:
- 1 = Snap action high limit set at 260°F (127°C)
- 2 = Snap action high limit set at 500°F (260°C)

Enclosures and Thermostats:
- S2 = NEMA 1 housing with 30 to 250°F (-1 to 121°C) single-pole thermostat
- S5 = NEMA 1 housing with 60 to 250°F (16 to 121°C) double-pole thermostat
- W0 = NEMA 4 housing, no thermostat
- W2 = NEMA 4 housing with 30 to 250°F (-1 to 121°C) single-pole thermostat
- W5 = NEMA 4 housing with 60 to 250°F (16 to 121°C) double-pole thermostat
- WJ = NEMA 4 housing with Type J process T/C in t-well
- WK = NEMA 4 housing with Type K process T/C in t-well
- SJ = NEMA 1 housing with Type J process T/C in t-well
- SK = NEMA 4 housing with Type K process T/C in t-well
- EJ = NEMA 7 housing with Type J process T/C in t-well
- EK = NEMA 7 housing with type K process T/C in t-well
- E0 = NEMA 7 housing with no thermostat
- EI = NEMA 7 housing with 50 to 250°F (10 to 121°C) single pole thermostat

Heater Wattage:
- 300A = 480V, 6000 W, 3-phase (delta)
- 300B = 480V, 2000 W, 3-phase (wye)
- 300C = 480V, 6000 W, 1-phase
- 300D = 480V, 4000 W, 1-phase
- 300E = 480V, 2000 W, 1-phase
- 300F = 240V, 6000 W, 3-phase (delta)
- 300G = 240V, 2000 W, 3-phase (wye)
- 300H = 240V, 6000 W, 1-phase
- 300J = 240V, 4000 W, 1-phase
- 300K = 240V, 2000 W, 1-phase
- 300L = 240V, 1500 W, 1-phase
- 300M = 240V, 1000 W, 1-phase
- 300Q = 208V, 4500 W, 3-phase (delta)
- 300R = 208V, 1500 W, 3-phase (wye)
- 300S = 208V, 4500 W, 1-phase
- 300T = 208V, 3000 W, 1-phase
- 300N = 120V, 1500 W, 1-phase
- 300P = 120V, 1000 W, 1-phase

Accessories:
- Compression fitting (high pressure) 274-55-6-5
- Insulation jacket 307-0-11-1