



CAST ALUMINUM

Solutions

CAST-X 4000 Circulation Heater

The new CAST-X 4000 circulation heater from CAS delivers high flow volume and electrical power in a compact unit. The CAST-X 4000 is available in single or double tube versions for maximum flexibility and efficiency. The media being heated never comes into direct contact with the heating elements reducing the risk of fluid contamination.

The compact size of the heater is made possible by our cast-in construction. By design, the heater elements are completely embedded in the aluminum. This heats the aluminum mass, creating a thermal flywheel which efficiently transfers heat to the heavy wall 316L stainless steel tubing which is also cast-in. The resulting product delivers maximum power and capacity in a small footprint.

Since the material being heated in the tubing never comes into direct contact with the heating elements, the CAST-X 4000 is ideal for indirect heating applications where contamination and fluid cleanliness are important.

The CAS design outlasts, and out performs a typical immersion heater. The Cast-X 4000 delivers superior performance and long life. With very low maintenance, downtime is minimal and overall cost of ownership is low.

APPLICATIONS

Distillation of fuel oils Oil and water separation

Fuel oil preheating for burners and boilers

Water and oil heating for foods and beverages

Steam generation and superheating

Glycol and oil heating for heat transfer systems

Deionized water heating for sterilization

Air, CO₂ and nitrogen heating

Fuel and Oil heating for test stands

FEATURES AND BENEFITS

Robust cast-in aluminum construction

Ensures an intrinsically safe thermal solution
Prevents fluid contamination
Heats sensitive materials safely with indirect heating

Low Maintenance

Elements never need to be replaced

Dual-tube construction

Fluid (water) flow up to 18 GPM for single tube flow
Can reduce pressure drop by running tubes in parallel

Fluid path independent of heater sheath

Allows sensitive materials to be heated safely
Prevents fluid contamination

316L stainless steel seamless tube for fluid path

Compatible with a wide range of process materials
High-pressure operation up to 2500 psi

Non-welded construction

Offers economical package price
Minimizes potential leakage

Self-draining



CAST-X 4000

Circulation Heater

SPECIFICATIONS

TUBE SPECS

Size - 1 in. (25.4mm) outside dia. x .083 (2.1mm) wall

Tube material - 316L stainless steel

Process tube length - 211 in. (536cm) (per tube)

Max. working fluid pressure- 2500 psi (172bar)

WEIGHT

Nema 4, 279 lbs (127Kg),
Atex 305 lbs (138Kg)

MAX WORKING TEMPS

250°F (121°C) (NEMA 7 or ATEX)

500°F (260°C) (NEMA 4)

OPTIONS (STANDARD)

3-phase electrical operation with 208, 240, 380, 415 and 480 Volt configurations

Output power 20kW to 60kW

NEMA 4 terminal enclosure/housing

ATEX approved explosion proof terminal enclosure/housing

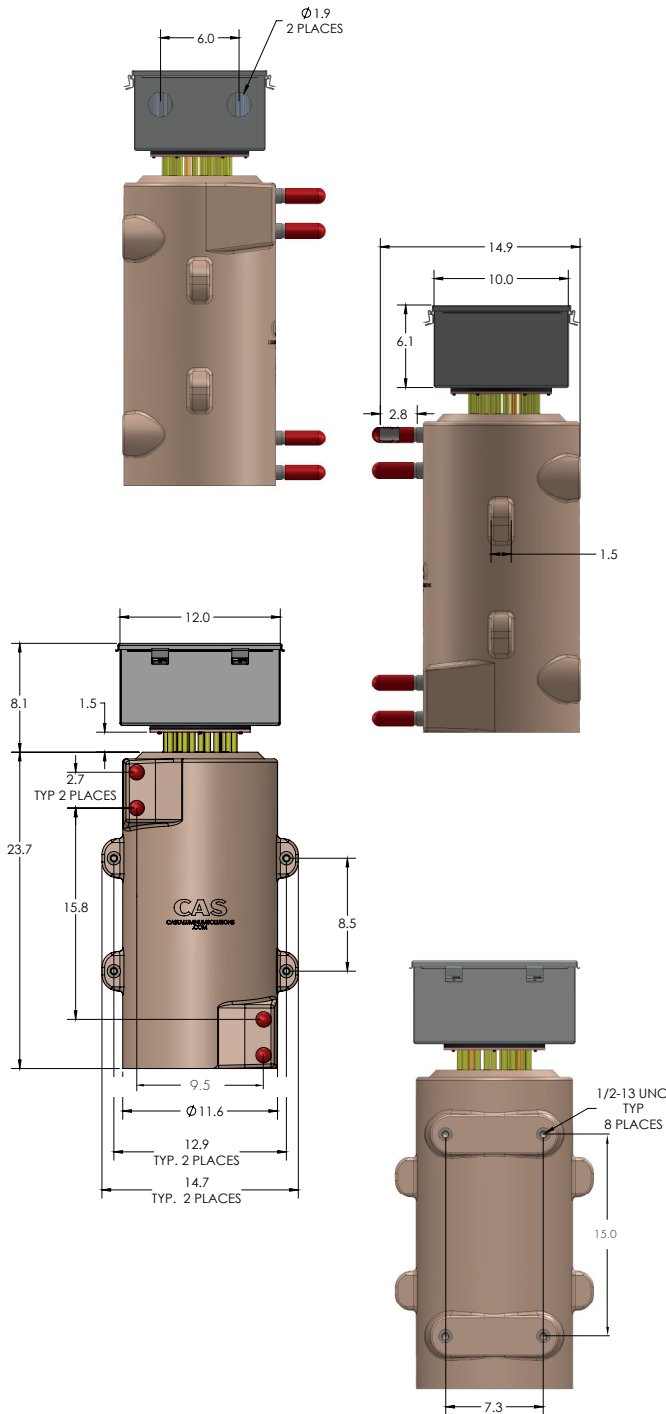
OPTIONS (NON-STANDARD)

Passivated or electropolished wetted surfaces

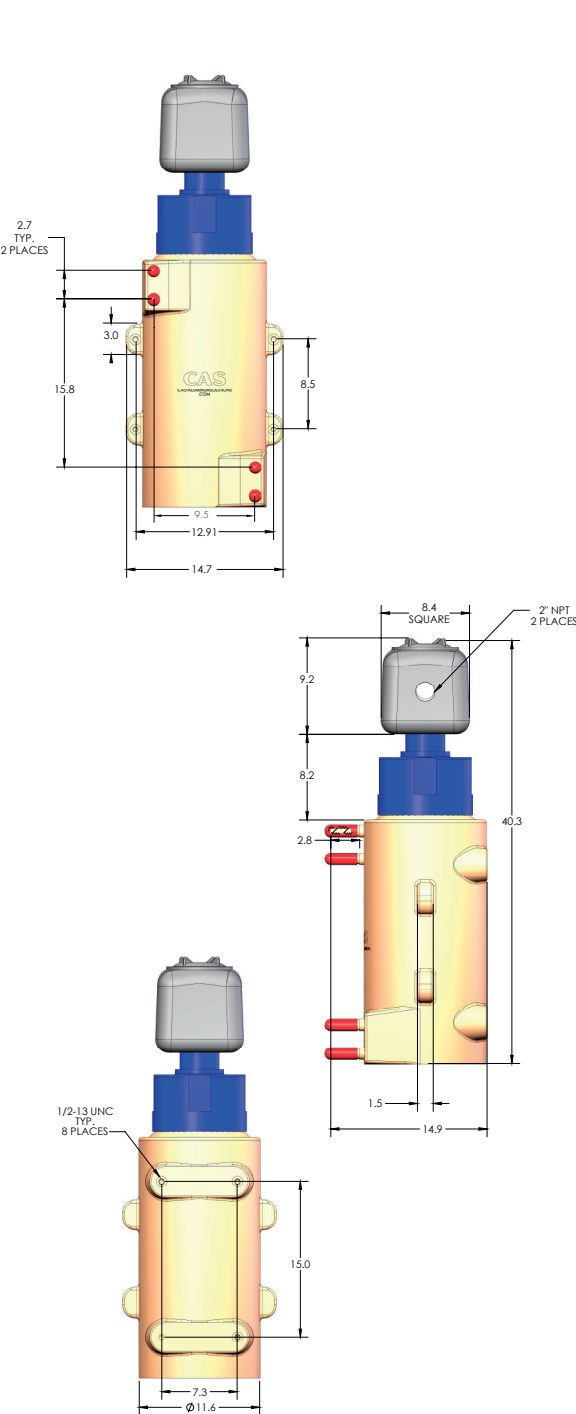
Custom fittings and sensors

DIMENSIONS

NEMA 4 HOUSING



ATEX HOUSING



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1310 Kingsland Drive Batavia, Illinois 60510

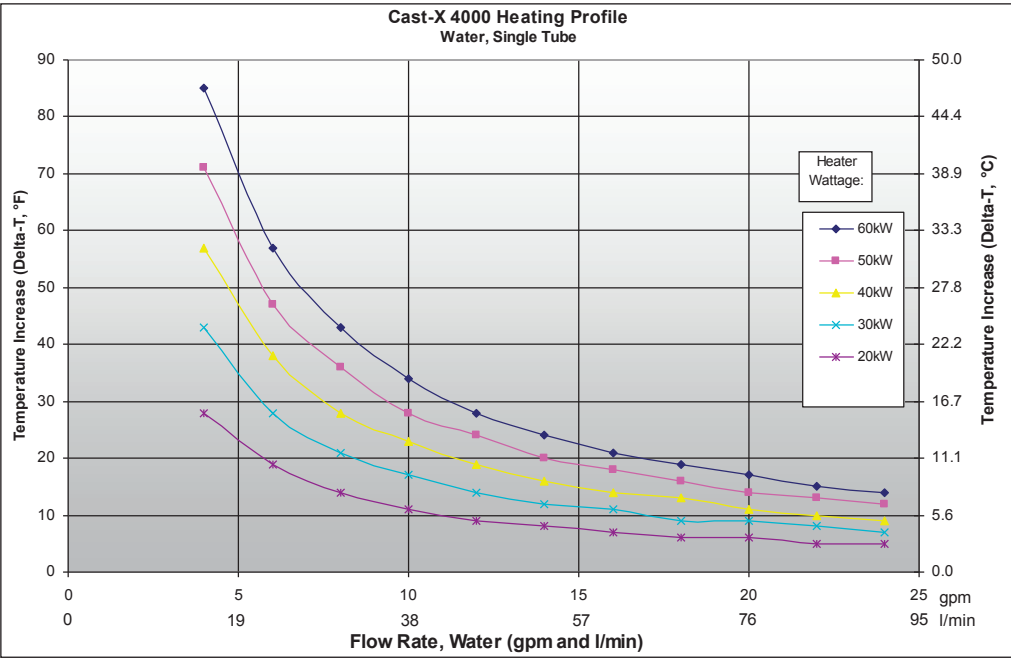
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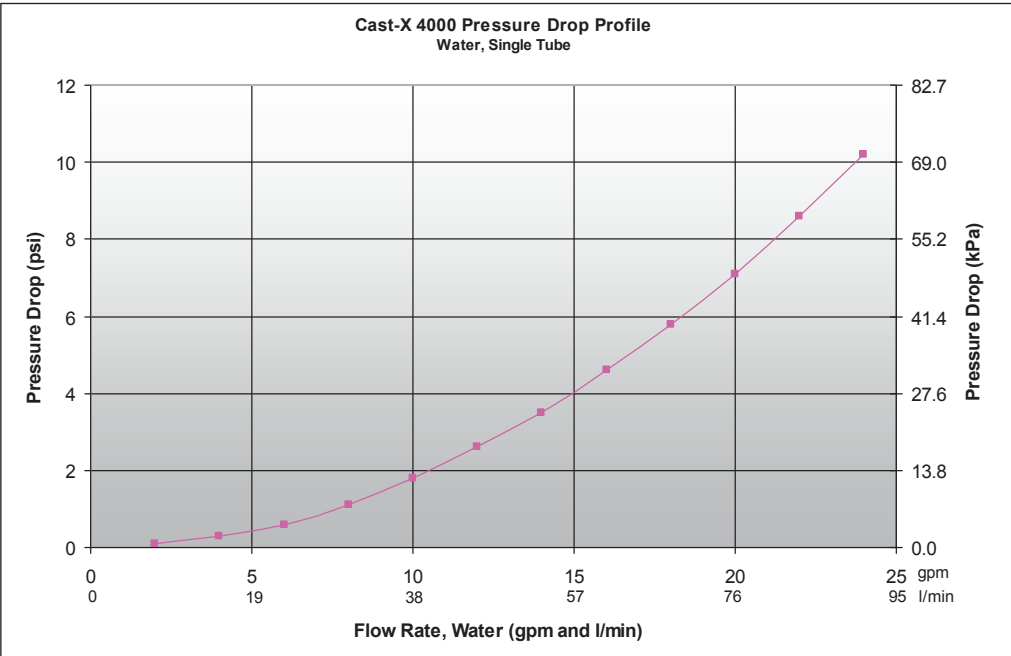
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PERFORMANCE CURVES - WATER (gpm)*



- Temperature increase versus water flow rate for several wattages, using a single tube.
- Assumed water entry at 15°C (60°F).
- Interpolate between curves for wattages that are not listed.



- Values are for one tube only.
- Pressure drop can be reduced by hooking up multiple heaters in parallel.
- Running tubes in parallel will have similar pressure drop and double the flow rate.

*Actual performance may vary. Performance curves are provided for reference, as every application is different.

WIRING

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

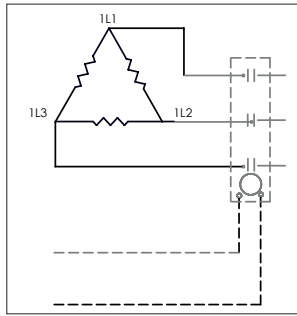


Figure 1
3 PHASE 1 DELTA CIRCUIT

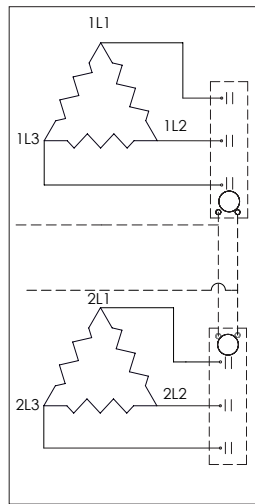


Figure 2
3 PHASE 2 DELTA CIRCUITS

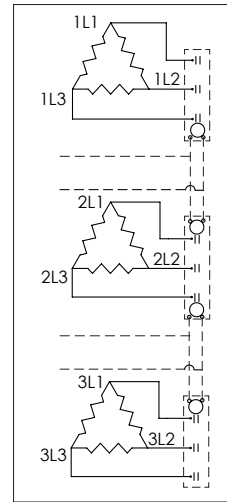


Figure 3
3 PHASE 3 DELTA CIRCUITS

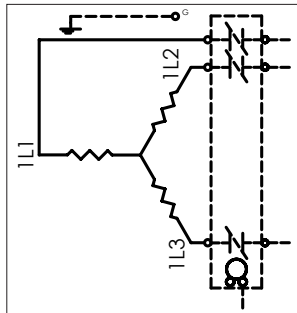


Figure 4
3 PHASE 1 WYE CIRCUIT

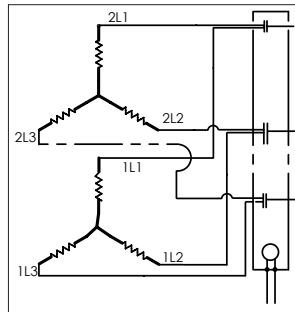


Figure 5
3 PHASE 2 WYE CIRCUITS

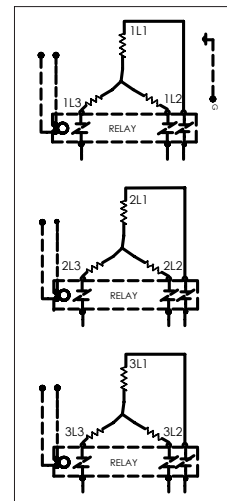


Figure 6
3 PHASE 3 WYE CIRCUITS

WIRING SCHEMATICS

DESCRIPTION				FIGURE NUMBER	I (LINE)
300A	20kW	480V	3-phase 1 delta circuit	1	25A
300B	40kW	480V	3-phase 2 delta circuits	2	50A
300C	60kW	480V	3-phase 3 delta circuits	3	75A
300D	20kW	415V	3-phase 1 wye circuit	4	27.8A
300E	40kW	415V	3-phase 2 wye circuits	5	55.6A
300F	60kW	415V	3-phase 3 wye circuit	6	83.4A
300G	12.5kW	380V	3-phase 1 delta circuit	1	19A
300H	25.1kW	380V	3-phase 2 delta circuits	2	38.1A
300K	37.6kW	380V	3-phase 3 delta circuits	3	57.1A
300L	20kW	240V	3-phase 1 delta circuit	1	48.1A
300M	40kW	240V	3-phase 2 delta circuits	2	96.2A
300N	60kW	240V	3-phase 3 delta circuits	3	144.3A
300P	15kW	208V	3-phase 1 delta circuit	1	41.7A
300Q	30kW	208V	3-phase 2 delta circuits	2	83.4A
300R	45kW	208V	3-phase 3 delta circuits	3	125.1A

CAST-X 4000

Circulation Heater

ORDERING INFORMATION

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

Cast-X 4000: Size: 1 in. (25.4 mm) O.D., x 0.083 in. (2.1 mm) wall, Tube material: seamless 316L SS tubing,
Tube length: 211 in (536cm) (per tube), Max working fluid pressure: 2500 psi (172bar)

Heater Wattage:

300A = 20kW, 480V, 3-phase 1 delta circuit
300B = 40kW, 480V, 3-phase 2 delta circuits
300C = 60kW, 480V, 3-phase 3 delta circuits
300D = 20kW, 415V, 3-phase 1 wye circuit
300E = 40kW, 415V, 3-phase 2 wye circuits
300F = 60kW, 415V, 3-phase 3 wye circuits
300G = 12.5kW, 380V, 3-phase 1 delta circuit
300H = 25.1kW, 380V, 3-phase 2 delta circuits
300K = 37.6kW, 380V, 3-phase 3 delta circuits
300L = 20kW, 240V, 3-phase 1 delta circuit
300M = 40kW, 240V, 3-phase 2 delta circuits
300N = 60kW, 240V, 3-phase 3 delta circuits
300P = 15kW, 208V, 3-phase 1 delta circuit
300Q = 30kW, 208V, 3-phase 2 delta circuits
300R = 45kW, 208V, 3-phase 3 delta circuits

Enclosures and Thermostats:

W00 = NEMA 4 housing
W0J = NEMA 4 housing with Type J T/C in t-well
W0K = NEMA 4 housing with Type K process T/C in t-well
WJJ = NEMA 4 housing with 2 Type J T/C for process and high-limit control
WKK = NEMA 4 housing with 2 Type K T/C for process and high-limit control
E00 = NEMA 7 ATEX housing,
E0J = NEMA 7 ATEX housing with Type J process T/C in t-well
E0K = NEMA 7 ATEX housing with Type K process T/C in t-well
EJJ = NEMA 7 ATEX housing with 2 Type J T/C, for process and high-limit control
EKK = NEMA 7 ATEX housing with 2 Type K T/C, for process and high-limit control

B X 23D1 1K -



Tube Material

A = 316L Stainless Steel (Standard)
B = Hastelloy C-276
C = Inconel 600

of Tubes

1 = one tube
2 = two tubes (Standard)

Tube Finish

A = None (standard)
B = Electropolished finish
C = Passivation

Fitting

1 = None (standard)
2 = High Pressure
 Compression Fitting (loose)
 Set of four

Accessories:

Insulation Jacket - 307-0-17-1



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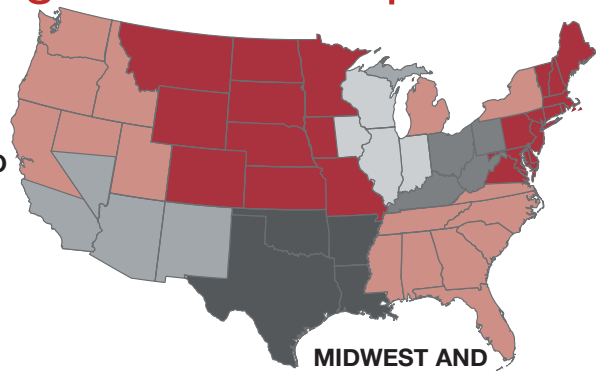
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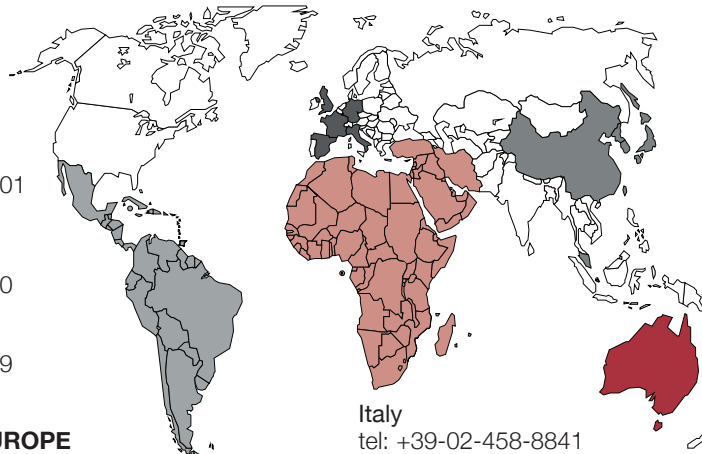
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SERVICE & SUPPORT

Cast Aluminum Solutions services North America and Canada with over 70 sales engineers and 40 distributors. We cover global markets through our international network of distributors based in both Europe and Asia. At CAS, we believe our service and support separates us from the pack. We value each and every customer. To that end, our team of sales engineers, account managers and customer service professionals strive to achieve total customer satisfaction. This philosophy is embraced at every level of the company, from the leaders to the factory floor.