

CHP SERIES

CUSTOM ENGINEERED ELECTRIC CIRCULATION HEATER PACKAGES



HEAT EXCHANGE AND TRANSFER, INC.

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The CHP Series of Custom Engineered, In-Line Electric Circulation Heater Packages designed for use with fluids or gases delivers the Safe Reliable Performance **HEAT** is known for in a packaged unit that is precisely engineered to your process.

Our engineering team will work with you to design a package based on a specific and unique process or application. CHP Series packages typically include an Electric Heater, Shell Chamber and Control Panel. Design capability for maximum operating temperatures up to 1,000°F.

CHP Series packages are constructed with either Carbon Steel or Stainless-Steel wetted materials, insulated with High Temperature Insulation with Jacketing, and packaged, skid-wired, and assembled on a drip-proof, seal-welded plate-and-channel fluid containment base.

HEAT offers four distinct levels of customization, ranging from minimal customization to fully built-to-specification designs. Each unique system undergoes a Factory Acceptance Test in accordance with **HEAT** standard practice prior to shipment.

GENERAL SPECIFICATIONS:

- Maximum Operating Temperatures up to 1000°F
- Heating Capacities from 20kW to 600kW and Higher
- Watt Densities from 5 to 43 watts/In2
- Up to 600 VAC, 3-Phase, 50/60Hz Power Capabilities
- General Purpose and Hazardous Area Designs

GENERAL FEATURES:

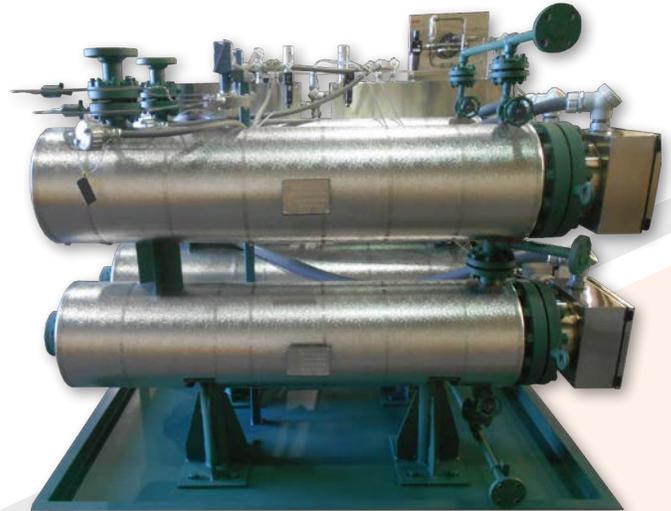
- (4) Level of Customization
- Indoor/Outdoor installation
- TEMA Type Baffles
- Stainless-Steel Sheathed Elements
- High Temperature Insulation with Jacket
- ASME Code and Stamp Design Available
- Skid Mounted and Pre-Wired with Control Panel
- Seller standard or Custom Paint Colors

HEATER:

- Vertical or horizontal orientations
- Extended and non-extended terminal housings
- Air Bleed and Drain Ports



**SAFE
RELIABLE
PERFORMANCE**



PIPING & MATERIAL OF CONSTRUCTION:

- Welded and flanged construction
- Carbon steel and stainless steel available
- ASME B31 Piping Materials

CONTROL CENTER:

- Skid mounted and remote mounted control panels
- Digital PID Temperature Control or Remote Operation Control
- Configurations for external control from PLC, DCS or other external control

GENERAL PURPOSE AND HAZARDOUS DESIGN AVAILABLE:

- NEMA 4, NEMA 4X, NEMA 12, NEMA 7, Class I, Division 1 and Class I, Division 2

DESIGN CERTIFICATIONS AVAILABLE:

- ASME U/UM, CRN
- NFPA 87, NFP70, NFPA 79, NEC, UL, cUL, CSA

LEVELS OF CUSTOMIZATION:

Based on the complexity of the project, your desired level of input, and the amount of customization required, **HEAT** offers four distinct project category levels, ranging from minimal customization to a full hands-on experience. Ranging from reference only, drawing approval, full approval, to built-to-specification design, these levels of customization correspond with the level of complexity required. Higher project levels generally take more time to complete.

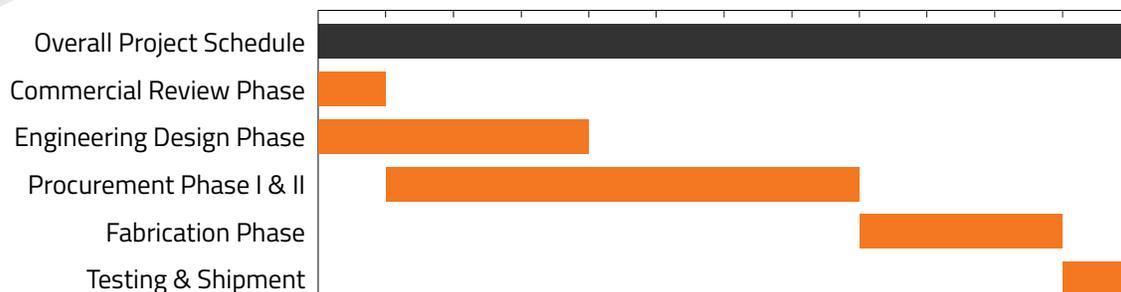
HEAT is fully committed to working with you toward the best solution for your specific objectives, and we have the process knowledge to do so. We promise to be forthright and candid with our knowledge and experience as we work with you to design your equipment, and we promise to listen to your feedback at every step along the way.

It's important to note that for all project category levels, flexibility is a key to success in custom designs. We understand that some modifications or plant specifications may come into play after an order is placed, and some modifications and changes to the design or components may be necessary. These changes can have impacts on the costs and lead-times originally associated with the project. **HEAT** offers flexibility when dealing with these types of unknowns, but some instances do require that projects be reclassified to a higher project category level. All our project levels allow for a transparent process in which the Project Manager will work with and advise you on the impacts of these unknowns as they arise, such as changes to cost, lead-time, and project reclassification.

We promise that we will work hard to make sure that you know all impacts to your project as we work together, so that you can make informed decisions with our team, and we can deliver you the best product.

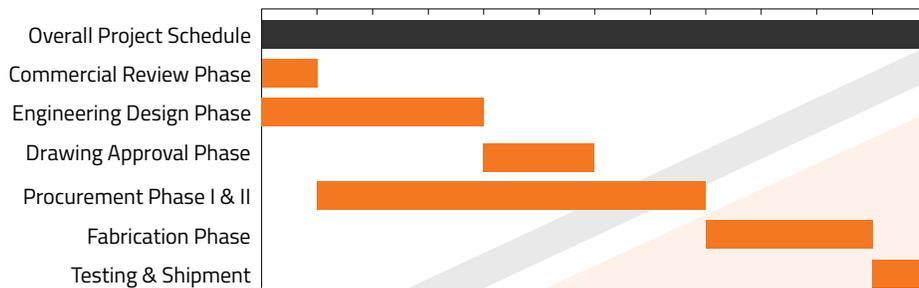
CATEGORY 1: REFERENCE ONLY:

- Custom designed equipment built-to-order.
- No modifications to equipment drawings or component bill of materials
- Component bill of materials are released for procurement upon order acknowledgement
- Drawings are created, or updated from a duplicate past order, and submitted to the **Customer/Client** as "Reference Only"
- Work orders are released to fabrication upon completion of design or drawing package reference submittal.



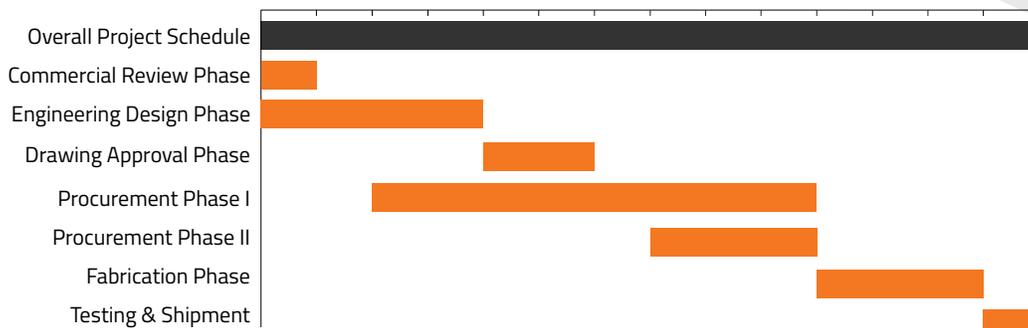
CATEGORY 2: DRAWING APPROVAL:

- Drawings and equipment functionality are customizable and subject to **Customer/Client** approval¹
- Component bill of materials are selected by **HEAT**² and released for procurement upon order acknowledgement.
- This type of design process allows the **Customer/Client** a single opportunity to make engineering & design modifications to the scope of work. Drawings must be returned as "Approved as Noted." Any deviations from this process will result in a change in project category³.
- Examples of customization are as follows:
 - All nozzle orientations
 - Equipment and component layout
 - Process and utility connection type
 - Safety interlock integration
 - Instrumentation location
 - Etc.



CATEGORY 3: FULL APPROVAL:

- Drawings and component bill of materials are customizable and subject to **Customer/Client** approval
- No component bill of material will be released for procurement until written approval is provided by the **Customer/Client** to **HEAT**, releasing **HEAT** to place said material on order.
- Work Orders will not be released for fabrication until full written approval on both the drawings and component bill of materials are provided by the **Customer/Client**
- Any modifications to the drawings or component bill of materials after the release of the project to fabrication will result in both price and delivery schedule impacts
- This type of design process does not allow for detailed **Customer/Client** provided specifications.



1. Adding additional features/functionality outside of the Piping and Instrument Diagram (P&ID) agreed upon at the time of order entry will result in a change order impacting both price and delivery schedule.

2. As related and presented on the Piping and Instrument Diagram (P&ID) provided with the proposal.

3. Based on Customer/Client requests during the project, a Project Category may change from what was originally agreed upon at the time of purchase order issuance. This may impact price, delivery schedule, invoice schedule, progress payments, etc. When a request by the Customer/Client results in a change in Project Category, all work will be put "ON HOLD" until both the Customer/Client and HEAT agree to a revised commercial and technical revisions to the original scope of work.

CATEGORY 4: BUILT-TO-SPECIFICATIONS & FULL APPROVAL:

- Drawings and component bill of materials are customizable and subject to **Customer/Client** approval
- No component bill of material will be released for procurement until written approval is provided by the **Customer/Client** to **HEAT**, releasing **HEAT** to place said material on order.
- Work Orders will not be released for fabrication until full written approval on both the drawings and component bill of materials are provided by the **Customer/Client**
- Any modifications to the drawings or component bill of materials after the release of the project to fabrication will result in both price and delivery schedule impacts
- Any additional **Customer/Client** specifications not previously provided to **HEAT** will result in the project being put "ON HOLD" until both **HEAT** and **Customer/Client** agree to a revised commercial and technical revision to the original scope of work.

