



## Regal® Series – Oil Temperature Control Units

The Regal Series hot oil temperature control units are designed to control the temperature of your process by circulating a high temperature heat transfer fluid through the process.

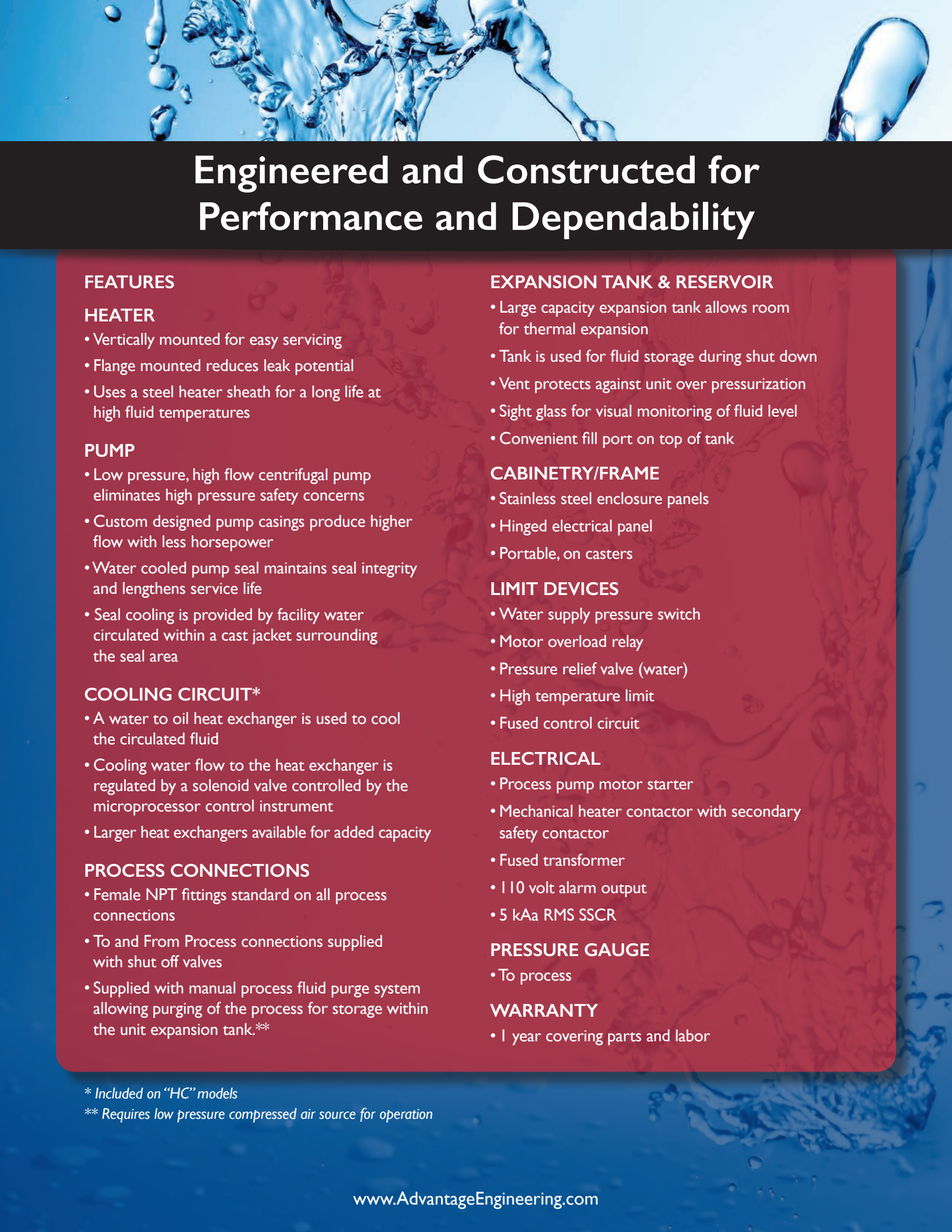
A high flow pump circulates the fluid at the appropriate temperature to maintain a precise fluid and process temperature. Depending on whether the process needs to be heated or cooled the circulated fluid is either heated by the electric heater or cooled indirectly via the available water to oil heat exchanger.

The Regal Series can be used in a wide range of industrial processes including; plastics, rubber, die casting as well as many other manufacturing processes that require a process fluid temperature range between 100°F - 500°F.

These units are designed with the highest quality components and can be customized to meet your specific requirements.

- 100° to 500°F Process Temperatures
- 1 to 7.5 Horsepower Centrifugal Pumps  
(20 - 100 gallons per minute flow rates)
- 12 to 48 kW Heaters
- 3.6 Square Foot Heat Exchanger  
(Included on "HC" models)
- Choice of Microprocessor Control Instruments





# Engineered and Constructed for Performance and Dependability

## FEATURES

### HEATER

- Vertically mounted for easy servicing
- Flange mounted reduces leak potential
- Uses a steel heater sheath for a long life at high fluid temperatures

### PUMP

- Low pressure, high flow centrifugal pump eliminates high pressure safety concerns
- Custom designed pump casings produce higher flow with less horsepower
- Water cooled pump seal maintains seal integrity and lengthens service life
- Seal cooling is provided by facility water circulated within a cast jacket surrounding the seal area

### COOLING CIRCUIT\*

- A water to oil heat exchanger is used to cool the circulated fluid
- Cooling water flow to the heat exchanger is regulated by a solenoid valve controlled by the microprocessor control instrument
- Larger heat exchangers available for added capacity

### PROCESS CONNECTIONS

- Female NPT fittings standard on all process connections
- To and From Process connections supplied with shut off valves
- Supplied with manual process fluid purge system allowing purging of the process for storage within the unit expansion tank.\*\*

### EXPANSION TANK & RESERVOIR

- Large capacity expansion tank allows room for thermal expansion
- Tank is used for fluid storage during shut down
- Vent protects against unit over pressurization
- Sight glass for visual monitoring of fluid level
- Convenient fill port on top of tank

### CABINETRY/FRAME

- Stainless steel enclosure panels
- Hinged electrical panel
- Portable, on casters

### LIMIT DEVICES

- Water supply pressure switch
- Motor overload relay
- Pressure relief valve (water)
- High temperature limit
- Fused control circuit

### ELECTRICAL

- Process pump motor starter
- Mechanical heater contactor with secondary safety contactor
- Fused transformer
- 110 volt alarm output
- 5 kAa RMS SSCR

### PRESSURE GAUGE

- To process

### WARRANTY

- 1 year covering parts and labor

\* Included on "HC" models

\*\* Requires low pressure compressed air source for operation

## OPTIONS

### CONTROL INSTRUMENT

- SPI/Modbus communications cable
- Modbus TCP/IP communication interface

### SYSTEM ALARMS

- Audible alarm
- Visual/audible alarm beacon

### HEAT EXCHANGERS

- Custom heat exchanger sizes



# Control Instruments

Advantage microprocessor control instruments are developed specifically for high temperature fluid circulating temperature control units. Each control instrument is built for the industrial environment and includes a 4 year warranty.

## Temptender® T500 Series



- 4.3" full color touch screen simplicity interface
- More than 25 screens with custom set-up and system monitoring information
- Home screen has continuous set point and to process temperature
- % Heating or Cooling indication on home screen
- Out-of-spec alarm including standard audible signal
- Pump rotation monitor
- Selectable English or Spanish language display
- °F or °C temperature display
- SPI or Modbus RTU communication
- For process fluid temperature up to 500°F
- Optional Modbus TCP/IP communication

## G500 Series



- Easy to use menu driven controller with LCD display
- Home screen includes continuous set point and to process temperature
- % Heating or Cooling indication on home screen
- Out-of-spec alarm including standard audible signal
- °F or °C temperature display
- SPI or Modbus RTU communication
- For process fluid temperature up to 500°F
- Optional Modbus TCP/IP communication

|                                                                  | Model <sup>8</sup>        | I230H | I230HC | I245H | I245HC | I250H | I250HC | I645H | I645HC | I650H | I650HC | I660H | I660HC | 2460H | 2460HC |
|------------------------------------------------------------------|---------------------------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|
| <b>Heater<sup>1</sup></b>                                        | KW                        | 12    | 12     | 12    | 12     | 12    | 12     | 16    | 16     | 16    | 16     | 16    | 16     | 24    | 24     |
| <b>Heat Exchanger</b>                                            | Square Feet               | —     | 3.6    | —     | 3.6    | —     | 3.6    | —     | 3.6    | —     | 3.6    | —     | 3.6    | —     | 3.6    |
| <b>Process Pump</b>                                              | HP                        | 1     | 1      | 1½    | 1½     | 2     | 2      | 1½    | 1½     | 2     | 2      | 3     | 3      | 3     | 3      |
|                                                                  | GPM                       | 30    | 30     | 45    | 45     | 50    | 50     | 45    | 45     | 50    | 50     | 60    | 60     | 60    | 60     |
|                                                                  | PSI                       | 24    | 24     | 26    | 26     | 28    | 28     | 26    | 26     | 28    | 28     | 26    | 26     | 26    | 26     |
| <b>Fluid Volume<sup>6,7</sup></b><br>(approx. gallons)           | Unit                      | 3     | 3      | 3     | 3      | 3     | 3      | 5     | 5      | 5     | 5      | 5     | 5      | 5     | 5      |
|                                                                  | Expansion Tank            | 2     | 2      | 2     | 2      | 2     | 2      | 4     | 4      | 4     | 4      | 4     | 4      | 4     | 4      |
| <b>Unit Amperage<sup>2</sup></b> (full load)<br><b>@ 3ø/60hz</b> | 230 volts                 | 34.8  | 34.8   | 36.4  | 36.4   | 38.0  | 38.0   | 47.0  | 47.0   | 49.0  | 49.0   | 51.0  | 51.0   | 71.0  | 71.0   |
|                                                                  | 460 volts                 | 17.9  | 17.9   | 18.7  | 18.7   | 19.5  | 19.5   | 23.5  | 23.5   | 24.5  | 24.5   | 25.5  | 25.5   | 35.5  | 35.5   |
|                                                                  | 575 volts                 | 14.3  | 14.3   | 14.9  | 14.9   | 15.6  | 15.6   | 18.8  | 18.8   | 18.5  | 18.5   | 20.4  | 20.4   | 28.4  | 28.4   |
| <b>Unit Dimensions</b>                                           | Height                    | 44    | 44     | 44    | 44     | 44    | 44     | 58    | 58     | 58    | 58     | 58    | 58     | 58    | 58     |
|                                                                  | Width                     | 16    | 16     | 16    | 16     | 16    | 16     | 23    | 23     | 23    | 23     | 23    | 23     | 23    | 23     |
|                                                                  | Depth                     | 24    | 24     | 24    | 24     | 24    | 24     | 47    | 47     | 47    | 47     | 47    | 47     | 47    | 47     |
| <b>Process Connections</b>                                       | To/From <sup>3</sup>      | 1     | 1      | 1     | 1      | 1     | 1      | 1     | 1      | 1     | 1      | 1     | 1      | 1     | 1      |
|                                                                  | Supply/Drain <sup>4</sup> | ½     | ½      | ½     | ½      | ½     | ½      | ½     | ½      | ½     | ½      | ½     | ½      | ½     | ½      |
| <b>Unit Weight (pounds)</b>                                      | Shipping <sup>5</sup>     | 315   | 330    | 320   | 335    | 325   | 340    | 585   | 600    | 590   | 605    | 595   | 610    | 600   | 615    |

|                                                                  | Model <sup>8</sup>        | 2770H | 2770HC | 27100H | 27100HC | 3660H | 3660HC | 3670H | 3670HC | 36100H | 36100HC | 4870H | 4870HC | 48100H | 48100HC |
|------------------------------------------------------------------|---------------------------|-------|--------|--------|---------|-------|--------|-------|--------|--------|---------|-------|--------|--------|---------|
| <b>Heater<sup>1</sup></b>                                        | KW                        | 27    | 27     | 27     | 27      | 36    | 36     | 36    | 36     | 36     | 36      | 48    | 48     | 48     | 48      |
| <b>Heat Exchanger</b>                                            | Square Feet               | —     | 3.6    | —      | 3.6     | —     | 3.6    | —     | 3.6    | —      | 3.6     | —     | 3.6    | —      | 3.6     |
| <b>Process Pump</b>                                              | HP                        | 5     | 5      | 7½     | 7½      | 3     | 3      | 5     | 5      | 7½     | 7½      | 5     | 5      | 7½     | 7½      |
|                                                                  | GPM                       | 70    | 70     | 100    | 100     | 60    | 60     | 70    | 70     | 100    | 100     | 70    | 70     | 100    | 100     |
|                                                                  | PSI                       | 28    | 28     | 44     | 44      | 26    | 26     | 28    | 28     | 44     | 44      | 28    | 28     | 44     | 44      |
| <b>Fluid Volume<sup>6,7</sup></b><br>(approx. gallons)           | Unit                      | 5     | 5      | 5      | 5       | 8     | 8      | 8     | 8      | 8      | 8       | 8     | 8      | 8      | 8       |
|                                                                  | Expansion Tank            | 5     | 5      | 5      | 5       | 7     | 7      | 7     | 7      | 7      | 7       | 7     | 7      | 7      | 7       |
| <b>Unit Amperage<sup>2</sup></b> (full load)<br><b>@ 3ø/60hz</b> | 230 volts                 | 84.0  | 84.0   | 90.8   | 90.8    | 101.1 | 101.1  | 106.7 | 106.7  | 113.5  | 113.5   | 138.8 | 138.8  | 143.6  | 143.6   |
|                                                                  | 460 volts                 | 42.4  | 42.4   | 45.8   | 45.8    | 50.9  | 50.9   | 53.7  | 53.7   | 57.1   | 57.1    | 68.9  | 68.9   | 72.3   | 72.3    |
|                                                                  | 575 volts                 | 33.9  | 33.9   | 36.6   | 36.6    | 40.7  | 40.7   | 42.9  | 42.9   | 45.6   | 45.6    | 55.1  | 55.1   | 57.8   | 57.8    |
| <b>Unit Dimensions (inches)</b>                                  | Height                    | 76    | 76     | 76     | 76      | 76    | 76     | 76    | 76     | 76     | 76      | 76    | 76     | 76     | 76      |
|                                                                  | Width                     | 27    | 27     | 27     | 27      | 27    | 27     | 27    | 27     | 27     | 27      | 27    | 27     | 27     | 27      |
|                                                                  | Depth                     | 45    | 45     | 45     | 45      | 45    | 45     | 45    | 45     | 45     | 45      | 45    | 45     | 45     | 45      |
| <b>Process Connections (inches)</b>                              | To/From <sup>3</sup>      | 2     | 2      | 2      | 2       | 2     | 2      | 2     | 2      | 2      | 2       | 2     | 2      | 2      | 2       |
|                                                                  | Supply/Drain <sup>4</sup> | ½     | ½      | ½      | ½       | ½     | ½      | ½     | ½      | ½      | ½       | ½     | ½      | ½      | ½       |
| <b>Unit Weight (pounds)</b>                                      | Shipping <sup>5</sup>     | 820   | 835    | 830    | 845     | 830   | 845    | 850   | 870    | 860    | 880     | 880   | 900    | 900    | 920     |

1. Derate heater output by 25% for 208/3/60 operation. 2. Consult factory for 50hz operations. 3. To Process/From Process, Female NPT fittings. 4. Cooling water supply/drain for pump seal and optional heat exchanger cooling, Female NPT fittings. 5. Approximate shipping weight. Selection of certain options and custom features may change the shipping weight. 6. Typical fluid expansion rates: a. Paratherm OR : 4.00% per 100°F b. Paratherm NF : 3.04% per 100°F c. Multitherm PG-1 : 3.10% per 100°F d. Calflo FG : 5.62% per 100°F 7. Do not use Mobiltherm 603. 8. Models with an "H" suffix provide heating only. Models with an "HC" suffix provide cooling through the U-Tube heat exchanger and heating. Cooling water must be provided from an external source.

### Model Designator for Regal Series Oil Temperature Control Units

**RK — I230 H T500**

Regal Series

Heater kW

Nominal Flow Rate GPM

Control Instrument

T500  
G500

H : Heating Only  
HC : Heating & Cooling



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