The TCO Series Oil Temperature Control Units have been engineered to withstand the rigors of high temperature heat transfer fluid recirculation. These superior performance units have a wide temperature operating range from 100°F to 550°F (38°C to 288°C). With a wide array of available options and several flow and output choices, units can be tailored to the unique needs of various manufacturing applications and individual facilities. Critical applications can maintain setpoint temperature to within 1°F (0.55°C).

**Features**

**Standard Features**
- Temperature range from 100°F to 550°F* (38°C to 288°C)
- Eurotherm 3216 micro-processor controller with “To-Process” and “Setpoint” LED readouts
- Positive displacement pump capable of reversing to evacuate the process
- Easily removable panels for quick access to internal components
- Pressure activated bypass valve
- Configurable auto vent sequence to automatically vent air from the system at start-up
- Independent high temperature safety thermostat to protect from heater overload
- Motor branch circuit overcurrent protection with phase loss and overload trip detection
- Y-strainer on the From Process line
- Forward-facing “To Process” pressure gauge
- Pressure switch for low pump pressure shutdown
- Audible alarm
- Low level alarm for reservoir
- Drain valve for heat transfer fluid removal and change
- 1 year parts and labor warranty at the factory
- 3 year controller warranty
- UL Listed sub-panel
- 460v

**Optional Features**
- 12 kW, 18 kW, or 24 kW heater
- Advanced Controller with more robust informational display
- Remote Controls enclosure to allow operators full access to unit control from a desired location
- Hour meter to monitor pump run time
- Closed loop heat exchanger to cool heat transfer fluid
- General fault visual alarm to alert operators of unit issues
- Multi-zone capable in various design styles that include common wiring and/or piping
- Protective Lexan® cover for additional protection in harsh environments

*NOTE: Standard units utilize a 6kW heater which limits the maximum operating temperature to 400°F (204°C)
## Advanced Controller

- PID control for both heating and cooling
- Built-in Ramp/Soak feature
- Setpoint, To Process, From Process and DT displays
- Autovent sequence (adjustable from 1 to 10 minutes)
- °F to °C programmable
- 2 line by 20 character LCD to display status information and alarms
- Advanced controller options include: 4-20 mA remote set point and retransmission of PV; SPI protocol, RS-485; General protocols, types RS-232, RS-485; Ethernet IP via Modbus RTU; Remote sensor with 6 ft. cable

## Product Diagrams

![Diagram of TCO series product]

## Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Pump HP (kW)</th>
<th>Flow GPM (LPM)</th>
<th>Pressure PSI (bar)</th>
<th>FLA by Heater Selection 460v</th>
<th>Dimensions in Inches (cm)</th>
<th>Shipping Wt. Lbs (kg)</th>
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<td>Width</td>
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Side Stream Filtration
For Oil Temperature Control Units

INCREASE EFFICIENCY
This side-stream filter could increase the heat transfer efficiency by as much as 20 percent by reducing the amount of insolubles such as sludge and coke circulated through your process. This reduction of efficiency causes the system to take longer to heat up and cool down increasing your energy costs.

REDUCE MAINTENANCE COSTS
The same insoluble contaminants that cause a decrease in efficiency can also result in wear on rotating components and plug up spring loaded relief valves. The wear on the rotating components can also lead to costly material repairs, machine downtime and labor costs. The plugging of the relief valve can result in a safety hazard due to the valve not opening properly and being able to keep a constant flow of fluid circulating through the heater(s).

Features

Standard Features
• 550°F maximum operating temperature
• 3 gpm maximum side-stream filtration
• Differential pressure gauge
• Isolation valves for filter change
• Includes 50 micron filter (25 & 100 micron filters available)
• Cart mounted on casters for mobility
• Cart size: 22” deep x 16’ wide x 38’ tall

Fluid Degradation
Heat transfer fluid in the presence of oxygen and heat degrades forming contaminants such as coke and sludge. These contaminants can cause the following problems in temperature control systems.
• Wear of rotating components such as pump impellers, gears and shafts, mechanical seals and valve stems
• Reduce capacity of heaters and heat exchangers by adhering to these surfaces
• Increased viscosity due to increased solids
• Increased energy consumption due to longer heat up or cool down time
TECH TIP: Heat Transfer Fluid Analysis

Your fluid should be analyzed at least every 2,000 hours of operation as part of a regular maintenance program. If you are operating at elevated temperatures (above 400°F) this analysis should be performed quarterly to determine the condition of the fluid.

Analysis Should Include:

- Specific gravity
- Total acid number (TAN)
- Viscosity
- Insolubles
- Flash point of the fluid

Once the analysis is done, a comparison can be made to the original specifications from the manufacturer.