

**COONEY ENGINEERED SOLUTIONS**

EVOLVING THE FRONTIER OF ENERGY TRANSFER



**SEMI-INSTANTANEOUS STEAM TO WATER HEATER**

# THERMO-PACK

**SAVE ENERGY, SPACE  
AND MONEY** WITH THE  
ULTRA-HIGH EFFICIENCY  
COONEY THERMO-PACK



High-Efficiency  
Shell & Coil HX



Compact Vertical  
Design

**316L  
SS**

Robust Corrosion  
Resistant 316L SS

**COONEY**  
ENGINEERED SOLUTIONS  
A DIVISION OF COONEY TECHNOLOGIES

[COONEYENGINEEREDSOLUTIONS.COM](http://COONEYENGINEEREDSOLUTIONS.COM)

# EFFICIENT | RELIABLE | COMPACT

SEMI-INSTANTANEOUS STEAM TO WATER HEAT EXCHANGER SKIDS

## THERMO-PACK

Available for both domestic or heating hot water applications. Completely customizable.

The Cooney Thermo-Pack is designed to save facilities energy, space and money.

**NEW**  
ON THE MARKET

**10-15%**  
AVERAGE ENERGY SAVINGS  
COMPARED TO SHELL & TUBE HX



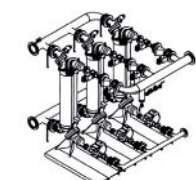
### Shell & Coil Technology

Compact with high heat transfer area and corrosion resistant.



### Condensate Sub-Cooling

Cross counterflow design sub-cools condensate for maximum efficiency.



### Completely Customizable

Customize components, outlet orientation, elevations and more!

## Product Benefits


**Efficient and reliable water heating in a compact skid.**

Using the latest in shell & coil heat exchanger technology, the Cooney Thermo-Pack provides efficient reliable water heating to the market for both domestic, heating hot water, and process applications.

Engineered to sub-cool steam condensate by utilizing the maximum amount of energy from every pound of steam, the Thermo-Pack can help increase efficiency and eliminates flash steam.

The compact vertical design can easily fit into tight mechanical rooms. While the ability to further customize dimensions and connection orientations helps to reduce installation time and costs.



 **CONTACT US TO CALCULATE HOW MUCH ENERGY YOU CAN SAVE**

# SHELL & COIL HEAT EXCHANGER

## Specifications

- Engineered to sub-cool condensate utilizing maximum energy from every pound of steam
- Helically wound and corrugated coil for enhanced turbulent flow and heat transfer coefficient
- 316L passivated electropolished stainless steel
- Completely enclosed welded construction
- Designed, constructed and tested in accordance with ASME Section VIII Division
- Maximum working pressure: 300 PSI
- Max working temperature: 422°F

## Efficiency

The large heat transfer surface area within the compact vertical design of the shell & coil heat exchanger allows for a large heat transfer surface area, resulting in a highly efficient and effective system.

This technology is the most efficient way to generate heating hot water and domestic hot water from steam due to its ability to utilize cross-counterflow sub-cooling.

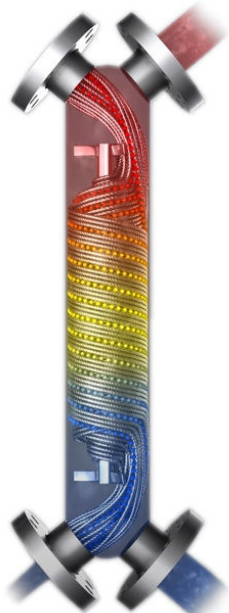
The Thermo-Pack captures the latent heat of the steam as well as sensible heat from the steam condensate. Perfect for district energy end-users.

## Maintenance

Complete SS 316L welded construction ensures strength and durability. The corrosion resistance of the tube, tubesheet and shell makes for minimal maintenance.

## Space Savings

The small footprint of the vertical heat exchanger makes it ideal for tight spaces. Ability to manifold together for unlimited capacity in confined spaces.





# DOMESTIC HOT WATER HEATER

COONEY THERMO-PACK

## DOMESTIC

### System Benefits

- Condensate sub-cooling to temperatures of 95-130°F
- Corrosion resistant heat exchanger with complete welded structure
- Eliminates dangerous and wasteful flash steam
- Reduces maintenance costs due to lower condensate temperatures
- V-Ball control valve standard with 300:1 turn down for precise control and energy savings
- Compact footprint and vertical design fits into small mechanical rooms

### Standard Components

- 316L Stainless Steel Shell & Coil Heat Exchanger
- Control Panel included for ease of operation and system feedback
- V-Ball Control Valve with 300:1 turn down - can accommodate up to 300 LB steam without the need of a steam pressure reducing valve or station
- Pressure / Temperature Relief Valve
- Inlet Y-Strainer
- Recirculating Pump
- Painted Carbon Steel Base Plates and Supports
- Available in: 15, 30, 60 GPM
- Additional sizes available for custom units



Model	Base Plate Dimension	F-F Flanges Across Skid	Maximum Height
15 GPM	30" x 30"	62" F-F	91" AFF
30 GPM	30" x 30"	64" F-F	91" AFF
60 GPM	30" x 42"	68" F-F	91" AFF

**\$18,724.50 ANNUAL SAVINGS COMPARED TO A SHELL & TUBE HX\***

	Cooney Thermo-Pack	Shell & Tube
Avg. Condensate Discharge Temperature	110° F	249.71° F
Steam Consumption	1,382 lb/hr	1,587 lb/hr
Sensible Heat Transfer from Condensate Sub-Cooling	194,159 BTU/hr	0 BTU/hr
Increase in Energy Recovery Efficiency	15%	0%

\*Based on steam pressure of 15 PSIG, 30 GPM, 10 hours of use per day, and \$25 cost per therm\*

### Custom Options

#### SKID DIMENSIONS

Need to fit into limited existing space? We can adjust the skid dimensions to conform to locations with restricted space.

#### BASE PLATE AND FRAME

Optional 316L SS base plate and frame.

#### CONTROL VALVE/PACKAGE

Variety of control options available per facility's specifications and requirements. Up to 300-1 turn down. Pneumatic control valves also available.

#### BLENDING STATION

Combats the risk of Legionella by increasing hot water discharge temperature and then blending cold water to desired temperature.

#### PRESSURE MOTIVE/PUMP TRAPS

Gravity condensate drainage standard. Pump traps are available if condensate needs to be lifted.

#### OUTLET ORIENTATION

We can adjust outlets to best fit your application making them easily accessible and saving you installation costs.

#### STEAM SHUT OFF SAFETY VALVE

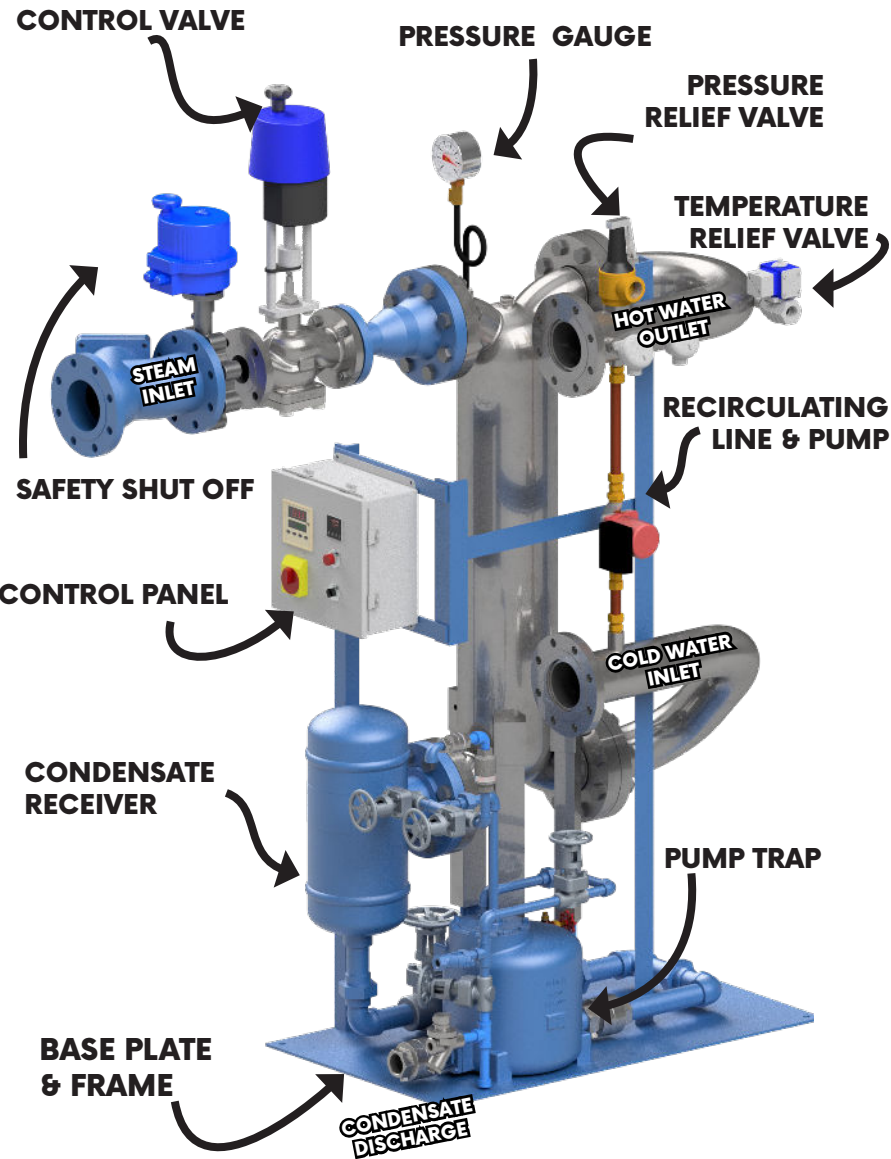
Available for an added level of steam safety protection.

#### EQUIPMENT ELEVATIONS

For areas with restricted head room, we can usually adjust equipment elevations to fit your space.

## Completely Customizable

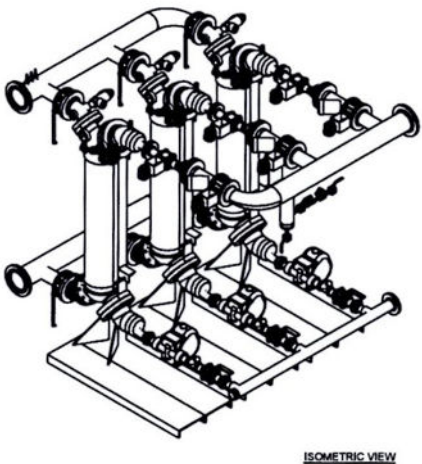
At Cooney Engineered Solutions we know that one size does not always fit all and that is why we offer custom, one-of-a-kind solutions for unique projects. We will engineer the Cooney Thermo-Pack with you to fit your specific application and requirements.



# HEATING HOT WATER

## System Benefits

- Efficiency - condensate sub-cooling using sensible heat from condensate
- Reduces maintenance costs of condensate pumps and equipment due to lower condensate temperatures
- Small footprint compared to typical shell & tube
- Heat exchangers can be manifolded together for unlimited capacity
- Control panel and integral sensing points allow precise control of discharge water temperatures
- V-Ball Control Valve with 300:1 turn down - can accommodate up to 300 PSI steam without the need of a pressure reducing valve or station



## Includes

- 316L Stainless Steel Shell & Coil Heat Exchanger
- V-Ball Control Valve up to 300:1 Turn Down
- Electronic or Pneumatic Steam Control Valves
- Pressure / Temperature Relief Valve
- Inlet Y-Strainer
- Recirculating Pump
- Painted Carbon Steel Base Plate and Supports
- Gravity Condensate Drainage Standard

## Options

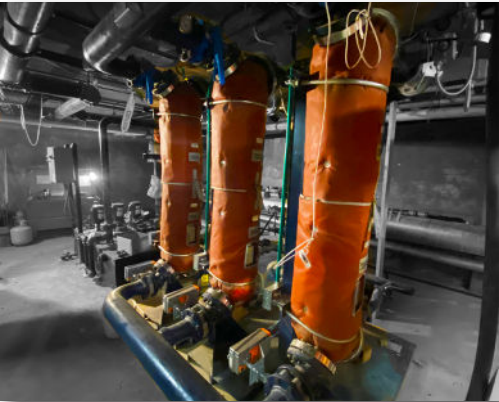
- Custom skid dimensions
- Outlet orientations
- Adjustable equipment elevations
- 316L SS base plate & supports
- Pressure motive / pump traps available if condensate needs to be lifted
- Steam safety shut off valve
- Full glycol preheat skids available

## Save Energy Ultra-Efficient Heat Exchanger

CONTACT US TO CALCULATE HOW  
MUCH ENERGY YOU CAN SAVE

10-15%  
AVERAGE COST SAVINGS  
COMPARED TO SHELL & TUBE HX

**\$7,661**  
4-Week Savings of a  
Cooney Thermo-Pack  
Compared to a Shell &  
Tube Heat Exchanger\*



	Cooney Thermo-Pack	Shell & Tube Heat Exchanger
Average Condensate Discharge Temperature	170° F	280.58° F
Steam Consumption	3,769.53 lb/hr	4,225.57 lb/hr
Sensible Heat Transfer from Condensate Sub-Cooling	420,903 BTU/hr	0 BTU/hr
Increase in Energy Recovery Efficiency	12%	0%

\*Based on steam pressure of 35 PSIG, 1,000 lbs/hour at a cost of \$25 per therm\*

## Testimonials

Learn how Cornell University utilizes Cooney Thermo-Pack's to provide reliable, efficient hot water to residents in their North Campus.

Read the Full Case Study  
On Our Website



Scan Me



Cooney Engineered Solutions worked  
with us and created what we wanted.  
And that is a big deal for us."

FRANK PERRY, CORNELL UNIVERSITY



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