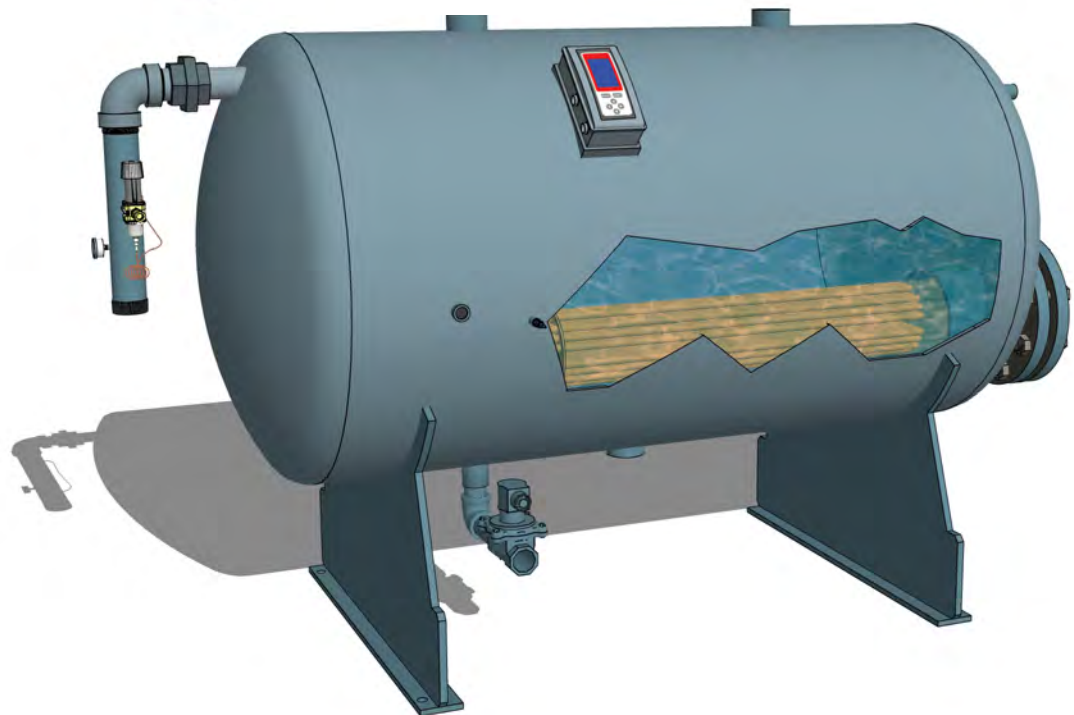
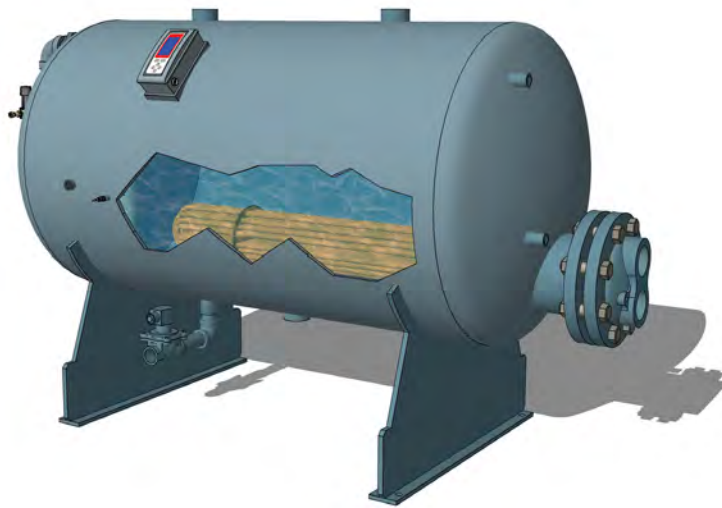


WHR Series



Waste Heat Recovery Package



CEMLINE CORPORATION

P.O. BOX 55 CHESWICK, PENNSYLVANIA 15024
PHONE: (724) 274-5430 FAX: (724) 274-5448

www.cemline.com

Advantages of Cemline® Waste Heat Recovery (WHR)

Cemline® Waste Heat Recovery Package (WHR) is designed to recover waste heat from steam condensate before it is dumped down the drain. This is a perfect package for large municipal steam systems where the condensate is not returned to the boiler but sent down the drain. The waste condensate can be used to preheat domestic water or pre heat other applications. The advantage of the Cemline WHR over existing systems is existing systems are 1 pass with the condensate and domestic hot water passing by quickly. The Cemline WHR slows down the condensate recovery time

allowing for more heat recovery. Less additional cooling water is wasted tempering condensate before it goes down the drain. The domestic water can be heated to as high as 180°F while cooling the condensate to as low as 80°F. The waste BTU's are saved by preheating domestic water reducing additional BTU's to be inputted to heat the domestic water.

Package includes:

Steam condensate receiver, pre-heat u-bend coil (single or double walled), electronic condensate control with dump valve, float level switch, and over

flow 2-way valve condensate cooler. Condensate is sent to the condensate receiver; the condensate can cool transferring heat to the pre-heat u-bend coil. Once the condensate temperature is below set point, condensate is drained from the bottom of the vessel. When condensate in the receiver becomes too high the 2 way control valve opens and condensate passes by the condensate cooler. The condensate will be cooled in the event it is greater than 140°F. The internal level controls maintain a level within the condensate vessel.

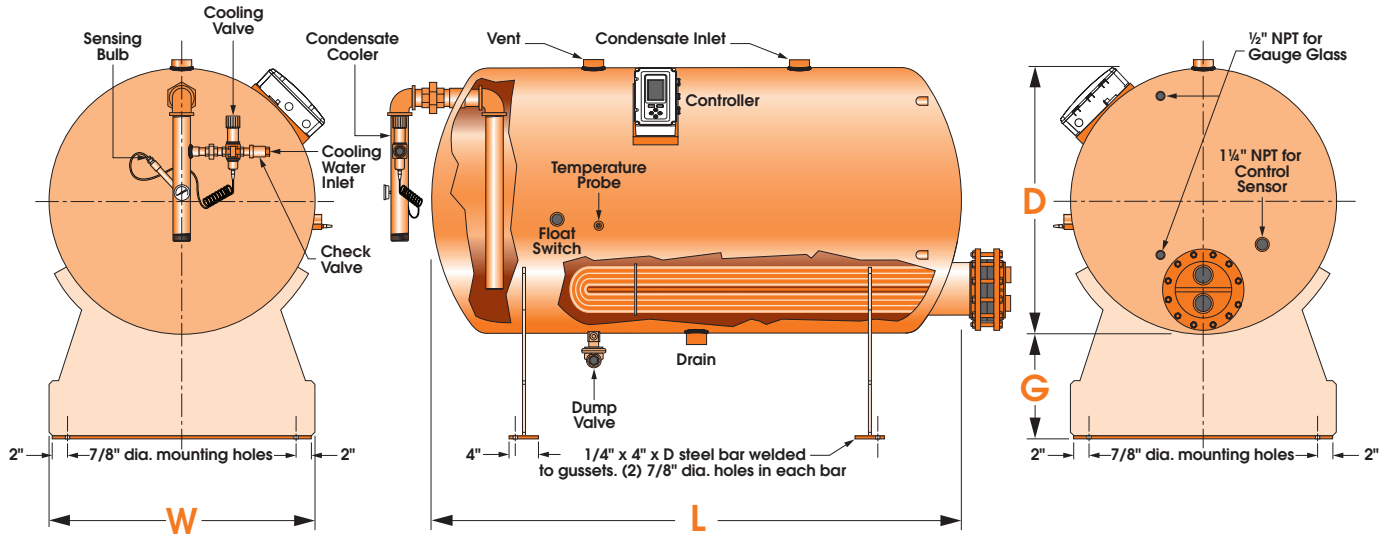
Standard Equipment

Features

- Tank**A.S.M.E. (125 psi @ 400° F)
- Gussets**Steel Gussets for horizontal support
- U-Bend Pre-Heat Coil**.....U-Bend heat exchanger coil. Double wall construction with 90:10 Copper Nickel Inner/90:10 Copper Nickel Outer tubing. This tubing to ensure a long life as resistant to condensate conditions. Pre-Heats domestic water or other fluid while cooling condensate in the vessel.
- Electronic Temperature Controller Solenoid Valve**.....The electronic temperature controller is designed to measure the temperature of the condensate in the tank. When the condensate temperature drops below set point the condensate temperature dump valve is opened to dump cooled condensate out of the vessel.
- Float and Level Switch**The float level switch prevents water from draining out below the level of the U-bend coil.
- Condensate Cooler**.....A condensate cooling leg is supplied to temper condensate from the tank if the level of the condensate was to become too high. This allows for condensate cooling by mixing cold water with higher temperature condensate to allow cooled water (below 140°F) to be dumped down the drain. The down pipe in the vessel allows for the drainage of the coolest water from the bottom of the vessel to be exhausted first.

Waste Heat Recovery (WHR) - Dimensional Data

Waste Heat Recovery Package



Dimensional Chart

Model	"D" Diameter	"L" Length	Condensate Inlet	Vent	Cooler Outlet	Cooling Water Inlet	Dump Valve Outlet	Drain	"G" Gusset Height	"W" Gusset Width
H60WHR	18"	61"	1-1/2"	2"	2"	1/2"	1"	1"	12 1/4"	20"
H120WHR	24"	60"	1-1/2"	2"	2"	1/2"	3/4"	1"	20 1/4"	26"
H200WHR	30"	72"	2"	2"	2"	1/2"	1"	2"	17 1/4"	32"
H300WHR	36"	72"	2"	2"	2"	1/2"	1"	2"	14 1/4"	38"
H500WHR	42"	90"	3"	3"	3"	3/4"	1-1/2"	2"	14 1/4"	44"

Sizing Data

Coil MODEL	Condensate Temperature (°F)		Gallons Cooled per Hour	Pre-Heat Water		
	Condensate Temperature (°F)	Drain Temperature (°F)		Inlet Temp. (°F)	Outlet Temp. (°F)	Flow Rate (GPM)
448-DW	212	140	225	40	80	6.6
648-DW	212	140	500	40	80	14.7
848-DW	212	140	800	40	80	23.4
1048-DW	212	140	1550	40	80	45.4
660-DW	212	140	675	40	80	19.8
860-DW	212	140	1175	40	80	34.4
1060-DW	212	140	1875	40	80	54.9
1260-DW	212	140	2975	40	80	87.2

Sample Specifications



For specifying Cemline Corporation Waste Heat Recovery (WHR) Series units, select model from charts and use specification below. Cemline has representation in most major cities or consult the factory.

Waste Heat Recovery (WHR)

Waste Heat Recovery shall be Cemline Series WHR; factory assembled and packaged. Water heater shall be constructed in accordance with A.S.M.E. Code for a working pressure of 125 psig. The packaged water heater shall be constructed with a vertical steel tank, cement lined (or 316-L stainless steel) with 316-L stainless threaded openings.

Heater shall be mounted on a steel support skid and shall have concealed lifting lugs. Heater shall be insulated with 3" Fiberglass protected by an enameled metal jacket, 20 gauge minimum thickness. Heater shall be factory assembled and piped including electronic operated 2 or 3-way temperature regulating valve. Heat exchanger shall be single wall copper brazed 316L Stainless Steel Plate Type (or double wall brazed or double wall plate and frame heat exchanger) an integrated cover and shall have an integral valved circulator to circulate domestic water through the heat exchanger into the bottom of the tank.

Heater shall be supplied with solid-state control module with LCD touch screen display and LED pilot lights to indicate on-off, primary high limit, and secondary high limit. Solid-state control module shall be provided with a field programmable digital electronic PID controller allowing the owner to set operating and temperature limits on the display screen. Solid-state control module shall have red alarm light and alarm horn with built in alarm silence relay. Solid-state control module shall be supplied with dry contact closure outputs to indicate to building automation system (BAS) the occurrence of power on, primary high temperature, and secondary high temperature. The control module shall allow the BAS to turn the heater on or off through a remote relay. The control module shall allow the BAS to remotely set the temperature of the heater using a 4-20 mA input signal. The control module shall allow the BAS to remotely monitor the operating temperature via a 4-20 mA signal. The control module shall allow the BAS to remotely monitor the operating temperature via 4-20 mA signal. Control module shall communicate with the BAS using Modbus Protocol via an RS-485 connection. Control module shall be supplied with an on-off switch and shall be mounted in a NEMA 4 panel. All solenoids and limits shall be 24 VAC.

Heater shall be furnished with a water pressure gauge and an A.S.M.E. pressure-temperature relief valve of sufficient size to relieve total BTU input of the coil.

Manufacturer shall assume responsibility for correct sizing of components to assure performance designated in design criteria.



- www.cemline.com
- Product Sizing Programs
 - Brochures
 - I.O.M. Manuals
 - Drawings & Specifications
 - Agent Locator
 - Plant Tour

Heater shall be Cemline Corporation Model H _____ WHR _____.
Tank dimensions _____" diameter x _____" long.
Storage gallon capacity _____.
Plate exchanger to heat _____ GPH from _____°F to _____°F with
_____ GPM of _____°F inlet - _____°F outlet Hot Water.

©2021 Cemline Corporation All Rights Reserved.

All trademarks on this brochure are the property of Cemline Corporation, unless otherwise noted or in any other way set forth as a third party rights. Unauthorized use of these trademarks, as well as the materials presented on this site, is expressly prohibited and constitutes a violation of the intellectual property rights of Cemline Corporation.

Vol. 1.0



Scan to view our mobile web link.

CEMLINE CORPORATION

P.O. BOX 55 CHESWICK, PENNSYLVANIA 15024
Phone: (724) 274-5430 FAX: (724) 274-5448

www.cemline.com