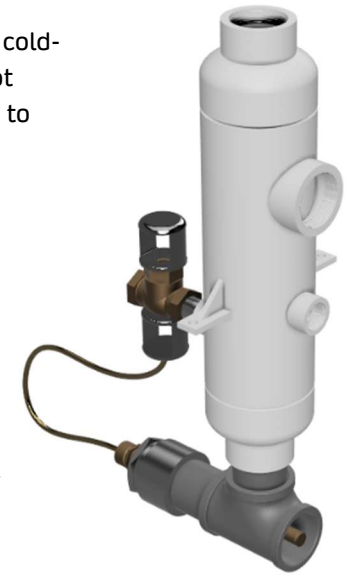
OVERVIEW

Madden Condensate Coolers are designed to quench hot condensate drain processes with a cold-water supply to bring the resulting mixture down to acceptable temperature limits. When hot condensate enters the vessel a self-operating cold-water valve actuates, allowing cold water to enter and quench to a field set standard temperature control range of 60-140 deg F.



Common applications are steam trap drain lines, steam-to-water heat exchanger drains, or autoclave/sterilizer drain lines.

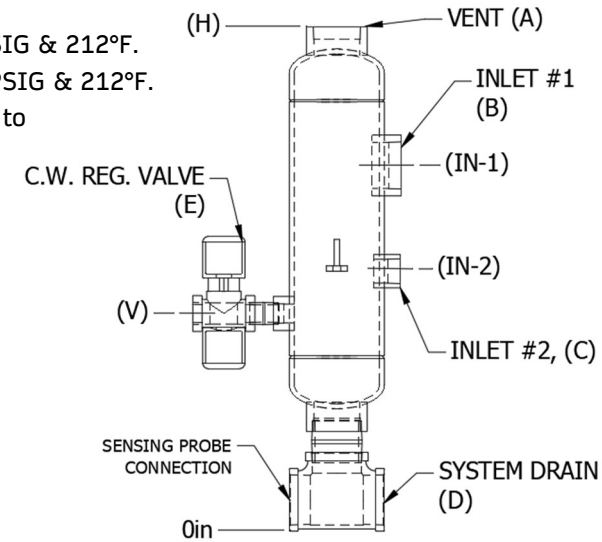
FEATURES & APPLICATION NOTES

1. **Fast Lead Times**. Typically 1-2 weeks after receipt of order.
2. **Robust**. Sch 40 Carbon Steel (standard) and 316SS (option) vessel material.
3. **Cost Effective**. Non-ASME Code vessels, built following ASME B31.1 standards. *ASME stamped designs are available for a cost adder.*
4. **NOTE**: Condensate receivers should not be used as a flash tank, they are intended for ≤ 15 PSIG drain processes. For higher pressure condensate drain applications, either pass the process through a general flash tank first or consider a Madden Blowdown Separator system as an alternative solution.

⚠ *End User Discretion: Condensate coolers (receivers) installed on 15+ PSIG drain lines without a dedicated flash tank must have their vent lines run **unimpeded** into a safe atmospheric area (ex. roof or to another ASME atmospheric flash vessel). Condensing equipment and/or any valves should **NOT** be installed on the vent line.*

CONDENSATE COOLER SIZING/SELECTION:

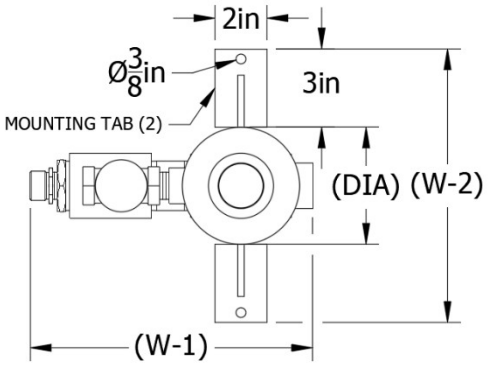
- Model CCCS04 is pre-sized for up to 5,000 PPH drain flow @ ≤ 15 PSIG & 212°F.
- Model CCCS08 is pre-sized for up to 15,000 PPH drain flow @ ≤ 15 PSIG & 212°F.
- Associated cold water valves are sized to reduce drain temperatures to ≤ 120 deg F, assumes ≤ 70 deg F. cooling water is available.
- ***Contact factory for custom designs built to spec' / higher pressures.***



STANDARD COLD WATER SELF-OPERATING VALVES:

- Incoming fluid pressure range rated up to 125 PSI.
- Brass alloy valve body.
- 6' capillary cord with ¾" MNPT brass bulb.
- Precise temperature control range of 60 – 140 deg F.
- Alternative cold water regulating valve brands and features available. Contact factory.

MODEL:	CCCS04-111H1HTT-G	CCCS08-222H2H1H1HD-G
A – VENT	1-1/2" FNPT	2-1/2" FNPT
B – INLET 1	1" FNPT	2" FNPT
C – INLET 2	1" FNPT	2" FNPT
D – DRAIN	1-1/2" FNPT	2-1/2" FNPT
E – CW Valve	¾" FNPT x FNPT (CV 7.7)	1.5" FNPT x FNPT (CV 30)
H – OAH	~22-7/8"	~27-7/8"
IN 1 Height	~21-3/8"	~19-5/8"
IN 2 Height	~16-3/8"	~14-5/8"
V – CW Height	~10"	~13"
DIA - Diameter	4" Sch 40 Pipe	8" Sch 40 Pipe
W-1	~10-7/8"	~20-9/16"
W-2	10-1/2"	14-5/8"



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ORDERING – PART NUMBER SYSTEM

- The table below denotes how to specify a custom Madden Condensate Cooler.
- Madden can build 4" and 8" condensate coolers to order in ≤ 1 week. Contact factory for quantities > 3 units.
- Madden can build custom 12" condensate coolers to order in 2-3 weeks. Contact factory for quantities > 3 units.

MADDEN CONDENSATE COOLER (CC) PART NUMBER TREE		
CC SERIES (1)	**VENT SIZE** (4)	**C.W. VALVE SIZE** (7)
CCCS – Carbon Steel	**1** – 1" FNPT	**T** – ¾" FNPT (CV 7.7)
CCSS – 316SS	**1H** – 1-1/2" FNPT	**1** – 1" FNPT (CV 9.72)
	2 – 2" FNPT	**1D** – 1" FNPT (CV 12)
CC VESSEL SIZE (2)	**2H** – 2-1/2" FNPT	**1QD** – 1-1/4" FNPT (CV 21)
04 – 4" diameter X 12" sm-sm	**3** – 3" FNPT	**1HD** – 1-1/2" FNPT (CV 30)
08 – 8" diameter X 12" sm-sm	**DRAIN SIZE** (5)	**2D** – 2" FNPT (CV 47)
12 – 12" diameter X 12" sm-sm	**1** – 1" FNPT	
	1H – 1-1/2" FNPT	***~INSERT DASH LINE HERE~***
~INSERT DASH LINE HERE~	**2** – 2" FNPT	
	2H – 2-1/2" FNPT	**ADDITIONAL FEATURES** (8)
CC INLET SIZE (3)	**3** – 3" FNPT	G – Mounting Gussets
Up to (2), list twice - if applicable	**C.W. CONNECTION SIZE** (6)	L – Angle Iron Legs w/ Foot Pads
H – ½" FNPT	**H** – ½" FNPT	A50 – ASME Code Stamped 50 PSI
T – ¾" FNPT	**T** – ¾" FNPT	A150 – ASME Code Stamped 150 PSI
1 – 1" FNPT	**1** – 1" FNPT	
1H – 1-1/2" FNPT	**1Q** – 1-1/4" FNPT	
2 – 2" FNPT	**1H** – 1-1/2" FNPT	
2H – 2-1/2" FNPT	**2** – 2" FNPT	
Example: CCCS04-111H1HTT-G		

FABRICATION NOTES

- Welding Procedure – Madden WPS No. GMAW-PIPE-01 (request if needed for review)
  - Process: Gas Metal Arc Welding
  - Weld Type: Butt, Fillet, and Branch Connections
  - Materials: ASTM A106 Grade B, ASTM A234 Grade WPB
  - Root opening (Gap): 1/16"; Root Face: 1/16"; Groove Angle: 60 deg
  - Gas Type: 75% Argon / 25% Carbon Dioxide
  - Madden fabrication standard includes (3) welding passes. Root, Fill, and Cap.
  - Madden follows ASME B31.1 standards.
- Hydro Test: Condensate coolers are rated to 150 PSI, tested for 30 minutes at 195 PSI
- Finish: red oxide primer with gray acrylic top coat on exterior only.
- ASME Option: For clients requiring Condensate Coolers to be ASME Code stamped:
  - U-1A form and National Board Serial Number provided
  - Built to ASME Div 1, Sec VIII, BPVC 50 PSI or 150 PSI