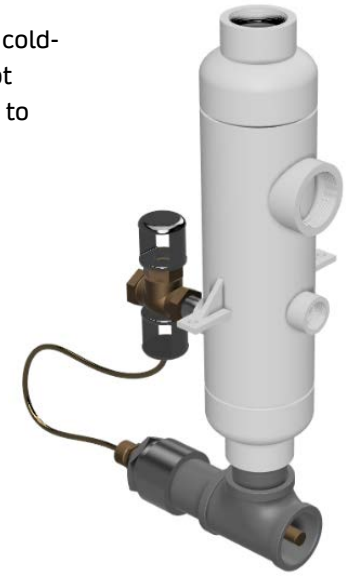
## OVERVIEW

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.

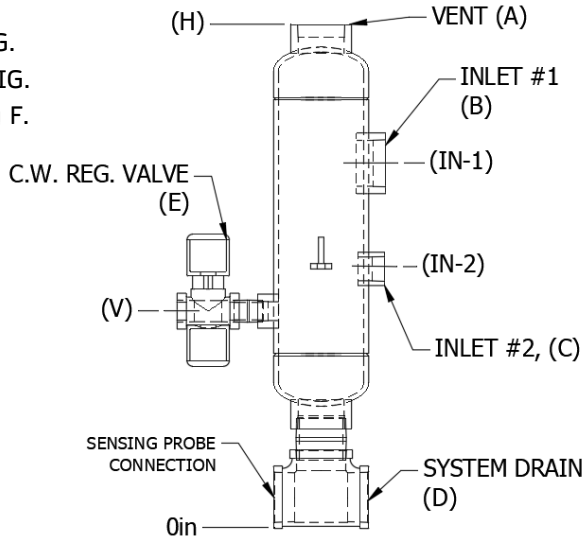
### FEATURES & APPLICATION NOTES

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:

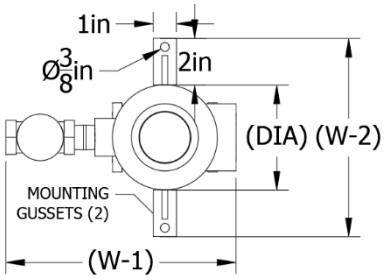
- Model CC__04 is pre-sized for up to 5,000 PPH drain flow @ ≤ 15 PSIG.
- Model CC__08 is pre-sized for up to 15,000 PPH drain flow @ ≤ 15 PSIG.
- Sized to reduce drain temperatures to < 120 deg F, assumes ≤ 70 deg F. cooling water available.
- ***Contact factory for custom designs built to spec' / higher 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: | CC__04-111H1H1H-G | CC__08-222H2H1H-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 14) |
| H – OAH | 24" | 30" |
| IN 1 Height | 17" | 20" |
| IN 2 Height | 12" | 15" |
| V – CW Vlv height | 10" | 13" |
| DIA - Diameter | 4" Sch 40 Pipe | 8" Sch 40 Pipe |
| W-1 | 10" | 15.5" |
| W-2 | 10.5" | 14.625" |

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## ORDERING – PART NUMBER SYSTEM

- The below table denotes how to specify a custom Madden Condensate Cooler.
- Madden can build 4" and 8" condensate coolers to order in 1-2 weeks. 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 PART NUMBER TREE | | |
|---|---|---|
| **CC SERIES** | **VENT SIZE** | ***Insert "-" (Dash) Here*** |
| CCCS – Carbon Steel | 1 – 1" FNPT | |
| CCSS – 316SS | 1H – 1-1/2" FNPT | **ADDITIONAL FEATURES** |
| | 2 – 2" FNPT | G – Mounting Gussets |
| **CC VESSE SIZE** | 2H – 2-1/2" FNPT | L – Angle Iron Legs w/ Foot Pads |
| 04 – 4" diameter X 6" sm-sm | | A50 – ASME Code Stamped 50 PSI |
| 08 – 8" diameter X 12" sm-sm | **DRAIN SIZE** | A150 – ASME Code Stamped 150 PSI |
| 12 – 12" diameter X 12" sm-sm | 1 – 1" FNPT | |
| | 1H – 1-1/2" FNPT | |
| ***Insert "-" (Dash) Here*** | 2 – 2" FNPT | |
| | 2H – 2-1/2" FNPT | |
| **INLET SIZE (X2 if applicable)** | | |
| H – ½" FNPT | **COLD WATER VALVE SIZE** | |
| T – ¾" FNPT | H – ½" FNPT | |
| 1 – 1" FNPT | T – ¾" FNPT | |
| 1H – 1-1/2" FNPT | 1 – 1" FNPT | |
| 2 – 2" FNPT | 1H – 1-1/2" FNPT | |
| 2H – 2-1/2" FNPT | 2 – 2" FNPT | |
| **Example: CCCS04-11H1HT-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