



CME

CME-WITH
OPTIONAL
VERTICAL
WELL

CONDENSATE MEASURING ELBOW

APPLICATIONS

- CIP/SIP System Condensate Drainage
- Sterilization of Process Vessels
- Culinary Steam
- Humidifiers
- WFI System Sterilization
- Fermenter Sterilization

OPTIONS

- MP - Mechanical Polish to 10 μ in. Ra
- EP - Electropolish
- SLR - SLR Orifice
- Tef-Steel, PTFE, Teflon®, E.P.D.M., USP Class VI & other gasket materials also available
- Horizontal or vertical inlet flow
- Horizontal or vertical well
- Horizontal or vertical outlet flow

APPLICABLE CODES

- ASME BPE

Canadian Registration # 0E0591.9

ORDERING CODE

- CME-A - Direct Immersion RTD

Trap Style	Orifice	Outlet Connection	Gasket	Ends and Finish	Well	Bellows
CME	1	6	V	6	NO	B
CME - CoMBo	1 - 204 (5/16")	6 - 1/2" - 3/4" 7 - 1" - 1 1/2"	V - Viton E - EPDM P - PTFE S - Silicone	6 - Tri Clamp, SF1 (MP 20 Ra) 7 - Tri Clamp, SF4 (EP 15 Ra)	W2 - 2.5" Well NO - None	B - Sensitive bellows (Std.)

OPERATION

Thermal actuator is filled at its free length with a liquid having a lower boiling point than water. On start-up, valve is normally open to discharge air, non-condensibles and condensate. When steam enters trap, thermal actuator fill vaporizes to a pressure higher than line pressure. This forces valve into seat orifice to prevent any further flow. As

condensate collects, it takes heat from the actuator, lowering internal pressure. Line pressure will then compress thermal actuator to open valve and discharge condensate. Valve opening automatically adjusts to load conditions from minimum on very light loads to full lift at maximum load. Sensitivity of bellows maintains condensate below thermal probe connection.

CoMBo CONDENSATE MEASURING ELBOW THERMOSTATIC STEAM TRAP

Pressures to 40 PSIG (2.7 barg)

Temperatures to 292°F (144°C)

Sensitivity – The –B bellows has been designed to achieve a 1°C (2-3°F) sub-cool. This is the most sensitive trap in the market place. It maintains backup of condensate below 6" (150mm) for SIP maintenance of vessels sized 40,000 liters and below.

High Capacity – These traps have 30-50% higher capacities than any competitor. This means they can often handle the peak condensate load encountered during vessel heat-up without requiring by-pass through a three-way valve.

Long Life – The single moving part is a multi-plate bellows made of 316L Stainless Steel. The bellows have been tested to exceed 40,000,000 cycles.

Industry Standard Food Grade Gasket – One gasket fits all Nicholson Sanitary Steam Traps. White Viton food grade gasket offers superior performance for higher pressure steam applications.

Water Hammer Protection – Impingement plate protects the bellows and valve from hydraulic shock. This design allows self-centering alignment for superior valve-to-orifice sealing.

Modulating Flow Dynamics – Nicholson Sanitary Steam Traps use conical valves for better flow dynamics, consistent system temperature and pressure and longer life than ball bearing valves.

Self Draining – Completely free draining with the steepest interior surfaces prevents puddling.

Air Venting – Thermostatic element allows for superior air venting and faster system startup.

Cost Efficient – Eliminates clamp on top of CDS

Simplified Validation – Only one unit to validate, complete with all MTRs.

NOTE: Please specify if Material Test Reports (MTR) or Certificates of Conformance (COC) are required.

CoMBo CONDENSATE MEASURING ELBOW THERMOSTATIC STEAM TRAP

SPECIFICATION

Steam trap shall be of balanced pressure design with 316L welded bellows capable of releasing condensate within 1°C (2-3°F) of saturated pressure. All other interior wetted components shall be of 316L stainless. It shall have interior body finish of at least 20 µ in. (0.5 µm) Ra and exterior body finish of at least 32 µ in. (0.75µm) Ra. Trap shall utilize hygienic body clamp allowing disassembly for inspection or cleaning and be entirely self draining. Trap end connections shall be standard hygienic clamp. Thermostatic actuator shall employ a conical valve lapped to the seat. Traps shall have SLR orifice where drainage at saturated temperatures is required. Traps shall be guaranteed against defects for 3 years. Trap shall maintain condensate below the temperature thermocouple for loads ranging from 1 to 27 lb/hr (0.4 to 12 kg/hr) which are encountered during SIP maintenance of vessels ranging from 20 liters to 40,000 liters respectively.

MAXIMUM OPERATING CONDITIONS

PMO: Max. Operating Pressure	40 psig (2.7 barg)
TMO: Max. Operating Temperature	292°F (144°C)
PMA: Max. Allowable Pressure	150 psig (10.3 barg)
TMA: Max. Allowable Temperature	366°F (186°C)

MATERIALS OF CONSTRUCTION

Part #	Part Name	Material
1	Condensate Elbow	ASME BPE 316L
2	Actuator Nut	316L
3	Body Gasket	Viton 3227
4	-B Bellows	316L
5	Body – Outlet	A276 316L
6	Valve	316L
7	Body Clamp	304
8	Impingement Plate	316L
9	Well	316L
10	Well Gasket	Viton 3227
11	Well Clamp	304

BODY SURFACE FINISH

Internal <20 µ in. (0.5 µm) Ra SFC1.External <32 µ in. (0.75 µm) Ra.
Optional mechanical polishing to 10 µ in. (0.25 µm) Ra and/or electropolish SFC4

GASKET APPROVALS

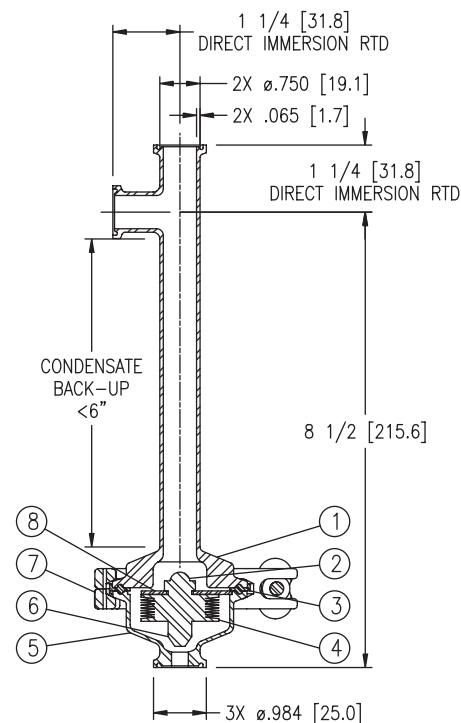
FDA CFR Title 21 Part 177, USDA, USP Class VI, 3A Sanitary Standard, NSF

SERVICE NOTES

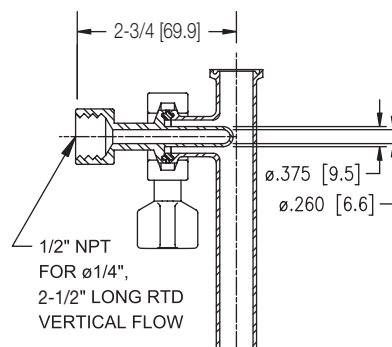
Trap is supplied with the -B Bellows to maintain condensate below the thermal probe. CME-W25 is designed to be self-draining with a horizontal inlet and vertical downward discharge.

MAXIMUM CAPACITY - lbs/hr (kg/hr)

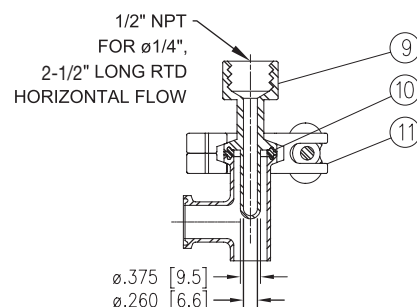
Condensate Temperature	Orifice Inches	Differential PSIG (bar)							
		5	10	15	20	25	30	35	40
80°C Water	5/16	1804	2551	3121	3608	4015	4419	4763	5030
		(819)	(1158)	(1417)	(1638)	(1823)	(2006)	(2162)	(2284)
5°C Subcool	5/16	1520	1671	1791	1869	1983	2128	2212	2301
		(690)	(759)	(813)	(849)	(900)	(966)	(1004)	(1045)
1°C Subcool	5/16	682	775	835	861	915	975	995	1109
		(310)	(352)	(379)	(391)	(415)	(443)	(452)	(503)



CME-A Direct Immersion RTD
2.3 lbs



CME-W25 Vertical Flow
2.8 lbs



CME-W25 Horizontal Flow

Connections: 3/4" Hygienic Clamp