



**doucette**  
industries, inc



# Item # NSY 20, CO2 Vaporizers

**For the Beverage Bottling Industry**

**Reduces operating costs while preventing beverage contamination**

**The Doucette CO2 Vaporizer™ Offers These Exclusive Benefits**

- Protects Beverage from Contamination
- Eliminates CO2 heating expenses
- Applicable to ALL Brands of Refrigeration Equipment
- Works with Ammonia & Freon refrigerants
- Compact and Ready to Install

The Doucette Industries CO2 Vaporizer™ marks a major advancement in refrigeration heat recovery technology by using waste heat energy from the refrigeration system to vaporize CO2 practically and simply. The heat exchanger operates like an auxiliary condenser, and is installed in the refrigeration compressor discharge line.

Designed specifically for the beverage bottling industry, this proven technology eliminates the need for an auxiliary steam or electric CO2 heating system. The compact Doucette CO2 Vaporizer™ converts the liquid CO2 to a gas for the bottling operation, saving considerably on expensive fossil fuels. It also protects your bottling operation from heat exchanger failure and beverage cross contamination.

CO2 vaporization ratings are based on 250 psig CO2 liquid storage pressure and 181.1 psig ammonia condensing pressure.

Specifications	
CO2 #/hr	1287
Btuh	187,500
Refrig. In	1 1/2 "
Refrig. Out	3/4 "
CO2 conn.	1 1/4 "
Weight	400 lbs
Note	Controls are not included.



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## How the CO2 Vaporizer™ works

The Doucette CO2 Vaporizer is a special purpose refrigeration condenser that uses a tube-in-tube counterflow design, making heat transfer highly efficient and cost effective. Bulk CO2 that is stored at -10°F must be heated to between 50°F and 70°F for the bottling process. Traditional methods of CO2 vaporization require either electric heaters or steam heat for this operation. Electric heaters are expensive to operate, and steam heaters require full-time boiler operation that is inconvenient and costly. Additionally, single wall heat exchangers can cause serious liability and contamination problems if a heat exchanger develops a leak or problem.

Replacing your conventional vaporization equipment with a Doucette CO2 Vaporizer eliminates these costs, problems and risks. The CO2 Vaporizer utilizes the hot refrigerant condensing temperatures (75°F to 110°F latent energy) to vaporize the CO2 for bottling use. Stainless Steel turbulators ensure full drying of CO2 liquid. Constructed for low refrigerant pressure drop and to have negligible effect on the system, the CO2 Vaporizer installs with minimal piping and controls. Operation is trouble free and requires no maintenance.

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## Applicable to All Brands of Refrigeration Equipment and Refrigerant Types

The CO2 Vaporizer's Desuperheater/Condenser design integrates with any brand of refrigeration system including Vilter, Frick, Sullair, Dunham-Bush, York, and Carrier. And it accommodates Ammonia and all Freons including R-22 and R-404a refrigerants. Doucette units can be easily specified based on your existing refrigeration system design parameters and the CO2 lb./hr. use rate of your plant.

The CO2 Vaporizer installs conveniently into a refrigeration system's existing refrigerant piping. Used as a condenser, the unit is installed in parallel with the existing system condensers.

The compact design of Doucette's CO2 Vaporizer permits mounting in practically any location, and the unit comes with frame and brackets. An indoor/outdoor insulated cabinet is included.

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## Vented Double Wall for Safety and Reliability

The Vaporizer's heat exchanger tubes are designed with patented vented double-wall stainless steel construction for an added measure of safety and reliability. The double-wall system prevents contamination of the beverage from the refrigeration circuit. Each vaporizer tube is fluted such that a vent path is created between the outer and inner tube. If a tube leak should ever occur, the gas vents to the atmosphere for easy detection. This double protection system is endorsed by the FDA and USDA for food protection, and is a major reason why many bottlers have switched to using Doucette CO2 Vaporizers.

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## Complete Payback in Two Years or Less

Beverage bottlers using a Doucette CO2 Vaporizer typically realize a payback period of 2 years or less through reduced energy costs. By using the waste condensing heat energy that is normally produced and expelled by your refrigeration system, the CO2 Vaporizer eliminates the energy costs of operating electric or steam type vaporizers. And the larger your bottling operation, the greater the return on your investment. Additional savings can be realized from lower operating head pressure on the refrigeration system.



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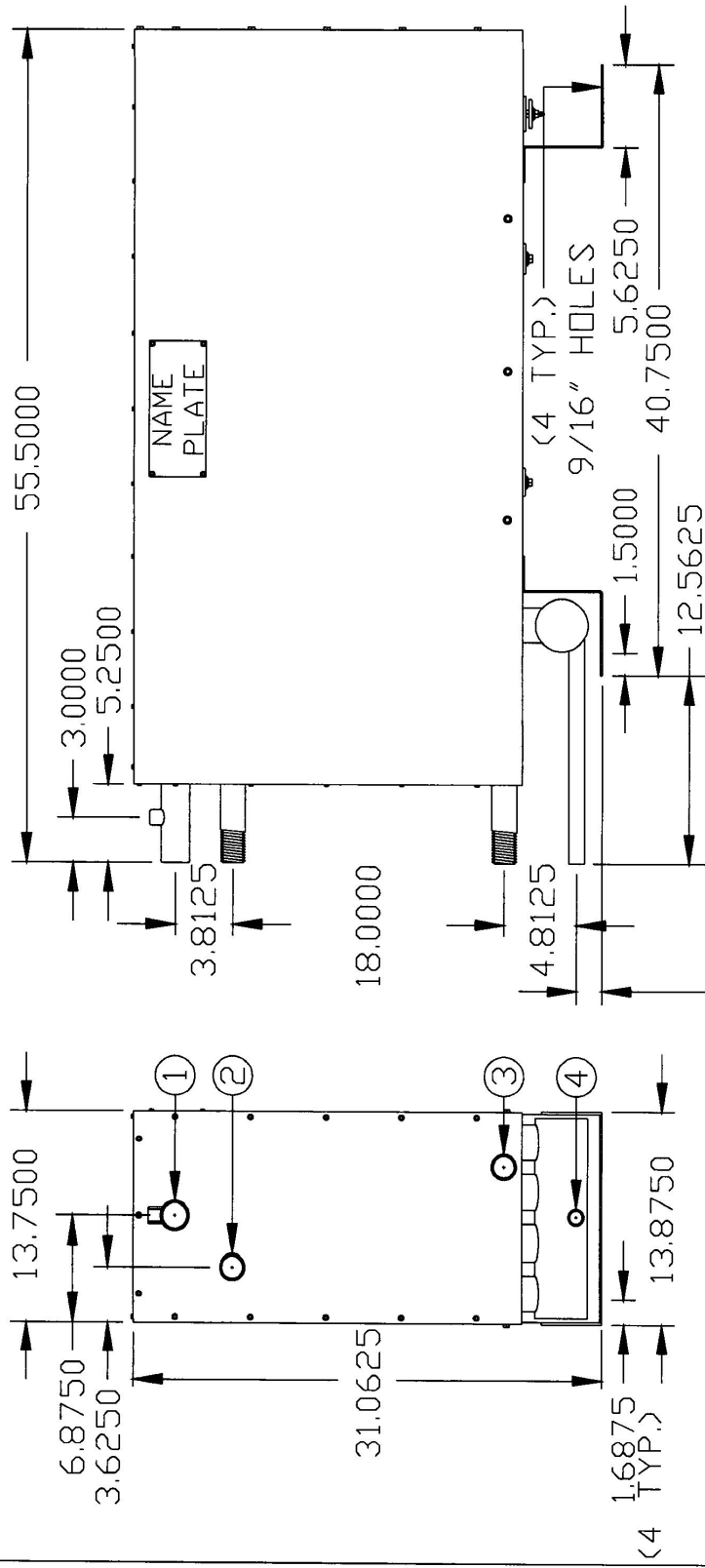
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DESIGN PRESSURE:  
SHELL SIDE 300PSIG  
TUBE SIDE 300PSIG

NOTES:  
(1) 1/2" RELIEF FITTING REQUIRED, TOPSIDE CONNECTION #1

- CONNECTIONS:
- 1.) REFRIGERANT SUPPLY 1-1/2" NDM, A106B BUTTWELD
  - 2.) CO2 RETURN 1-1/4" NDM, 304/304L S/S MPT
  - 3.) CO2 SUPPLY 1-1/4" NDM, 304/304L S/S MPT
  - 4.) REFRIGERANT RETURN 3/4" NDM, A106B BUTTWELD

TOLERANCES	DOUCETTE INDUSTRIES, INC.	
DECIMAL	SCALE	DRAWN BY: MLB
± .125	.09375	APP. BY: RJR
FRACTIONAL	TITLE NSY 20M5/1P-10STTX (C)	
ANGULAR	DATE	DRAWING NUMBER
±	2/14/00	C88004
Gauge .040	ALL DIMENSIONS INCHES, UNLESS SPECIFIED	

50.25 X 13.75 X 25.75



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