

**INTERPRETATION IC 15-2016-1 OF  
ANSI/ASHRAE STANDARD 15-2016  
SAFETY STANDARD FOR REFRIGERATION SYSTEMS**

Date Approved: January 21, 2018

**Request from:** Kiran Kishor Waghmare, Blue Star Ltd, India, 2nd Pokharan Road, Majiwada, Thane W, Mumbai, Maharashtra 400601.

**Reference:** This request for interpretation refers to the requirements presented in ANSI/ASHRAE Standard 15-2016, Section 9.7.2.3, regarding Pressure Vessel protection of high side of system (Condenser).

**Background:** We are a chiller manufacturer where two pressure vessels are assembled together, one is the cooler which is the low side and the other is the condenser which is high side. Cooler and condenser are protected by separate PRV. In the exceptions of Section 9.7.2.3 of ANSI/ASHRAE Standard 15-2016, it is mentioned that a single pressure relief valve is permitted on pressure vessels of 10 ft<sup>3</sup> (0.285 m<sup>3</sup>) or more internal gross volume when all the three exceptions mentioned in Section 9.7.2.3 are met.

**Interpretation No.1:** Gross volume for condenser means volume of shell minus volume of tubes. i.e if 100 tubes are there in the condenser, the gross volume of condenser will be shell volume minus volume of 100 tubes.

**Question No.1:** Is this Interpretation correct?

**Answer No.1:** No. Gross volume does not allow subtracting out the volume of the tubes. The following definition is provided in the Standard.

*internal gross volume:* the volume as determined from internal dimensions of the container with no allowance for the volume of internal parts.

**Interpretation No.2:** We can provide one Pressure relief valve to protect Cooler (low side of the system) where gross volume is going beyond 10 ft<sup>3</sup> (0.285 m<sup>3</sup>) but all the exceptions mentioned in Section 9.7.2.3 are met.

**Question No.2:** Is this Interpretation correct?

**Answer No.2:** Yes.

**Interpretation No.3:** We can provide one Pressure relief valve to protect Condenser (high side of the system) where gross volume is going beyond 10 ft<sup>3</sup> (0.285 m<sup>3</sup>) but all the exceptions mentioned in Section 9.7.2.3 are met.

**Question No.3:** Is this Interpretation correct?

*IC 15-2016-1*

**Answer No.3:** No. The exception in 9.7.2.3 is limited to low side components. As described, the condenser is a high side component.