		ENGINEERING SERVICE INSTRUCTIONS					
		<i>GO2 Flammable Refrigerant Specific Installation Guidelines</i>					
Document No	ENG-SVC-0089	Author	Andrew Mora	Approved	Joe K.	Revision	C
Release Date	3/11/2026	Application	Medical Series Utilizing Flammable Refrigerant			Page 1 of 7	

1 Affected Equipment

GO2-7500
GO2-2-5000
GO2-2-10000

2 Flammable Refrigerant Specific Installation Guidelines

Disclaimer: These guidelines are required by UL 60335 to be included with this product. ASHREA 15 and the (AHJ) Authority Having Jurisdiction supersede the guidelines listed below. If any guidelines cannot be met consult ASHREA 15 and the AHJ.

- Final approval of the installation must be carried out by the local (AHJ) Authority Having Jurisdiction. This could be the local fire marshal, mechanical inspector or another group depending on the installation location. The consulting engineer or the installer are the people responsible for identifying who the AHJ is.
- Contacting the AHJ prior to installation will ensure the installation complies with local code and regulations.
- Reference ASHRAE 15, local building codes and other applicable standards prior to installation. The following information is only a guideline and is not intended to discuss every aspect of the standard or replace standards and building codes.
- Approval of the relief valve piping installation must be performed by the local AHJ. Piping design and safety considerations are the responsibility of the consulting engineer after reviewing the site conditions.
- ASHRAE 15 (8.12) The unit must be installed outdoors. Units should not be installed under a penthouse, lean-to, or other open structure that could prevent proper venting.
- The unit must be installed in areas with restricted access or at a level not less than 2.5 meters from the ground.
 - Restricted Access Defined:
 - The chiller must not be easily accessible to the general public.
 - A person should not be able to walk up to the chiller and interact with it.
 - Examples of meeting this requirement:
 - A fence around chiller with a lock. (Figure 1 & Figure 2).
 - In an area that requires a key or access card to gain access (e.g. a roof or raised platform) (Figure 1).

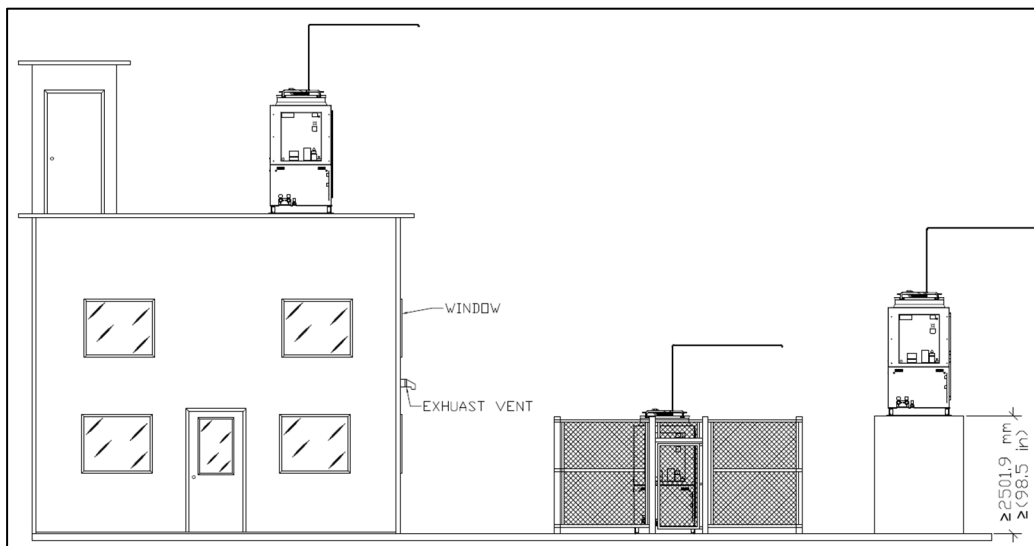


Figure 1 Examples of restricted access

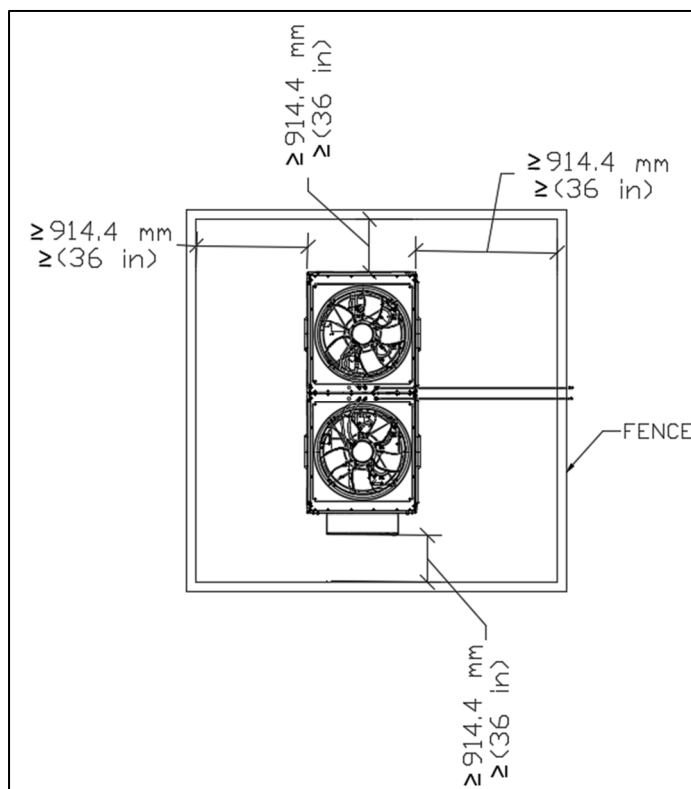


Figure 2 Clearances required when installed in a fence

- ASHRAE 15 (4.2) Equipment, other than *piping*, located outside a building and within 20 ft (6.1 m) of any building opening *shall* be governed by the *occupancy* classification of the building.
 - Building openings refer to any windows, ventilation openings, exits, or similar (Figure 3).

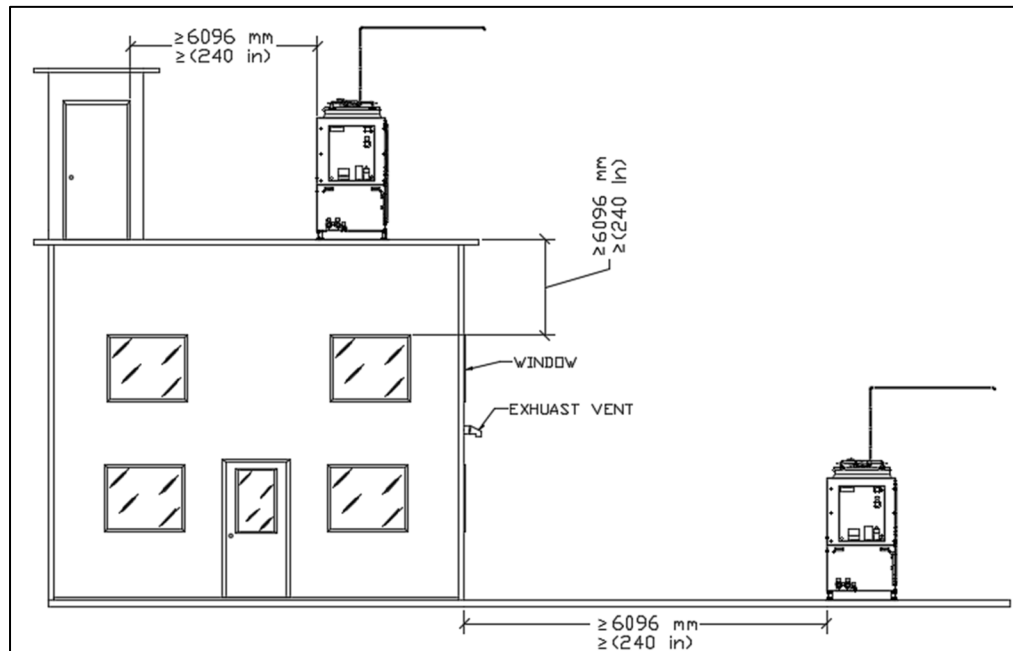


Figure 3 Distance required from building openings

- On top of the chiller are two pressure relief valve outlets each are 5/8" outer diameter and made of copper. Joints must be either brazed, flared, mechanical, press-connect, soldered, threaded or welded. All materials and joining methods used must be rated for refrigeration. (Figure 4 & Figure 5)

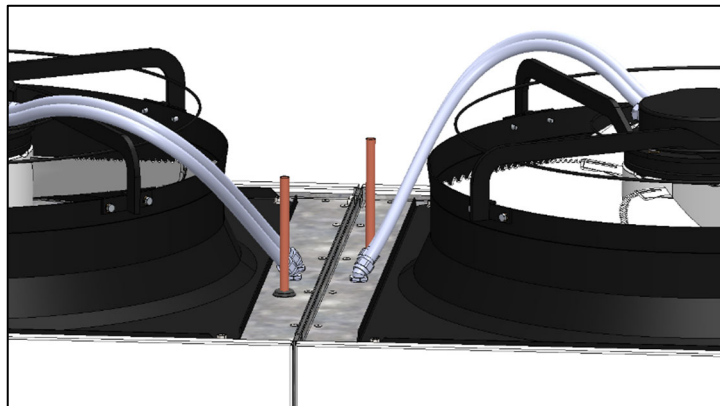


Figure 4 Pressure Relief Valve Connections

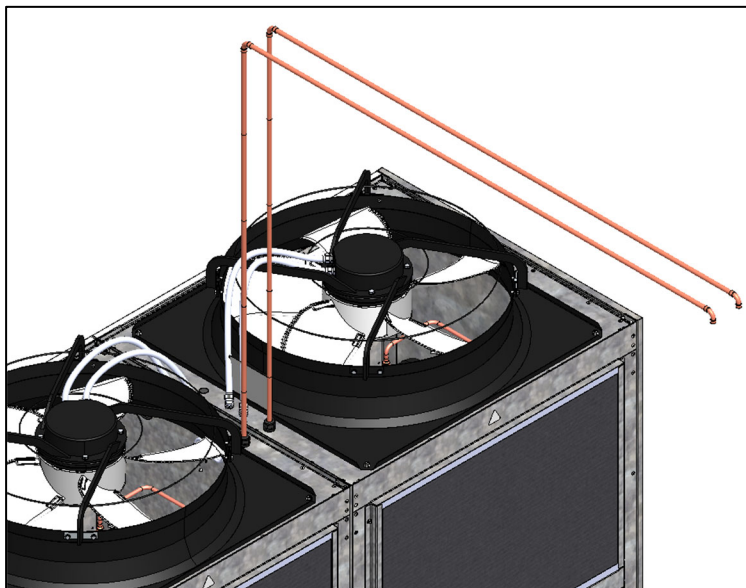


Figure 5 Example of one option of PRV outlet piping

- ASHRAE 15 (9.7.8.2 b) The PRV must discharge not less than 6.1 m (20 ft) from any windows, ventilation openings, exits, or similar (Figure 6).
- ASHRAE 15 (9.7.8.2 a) The PRV must be discharged to the atmosphere at a location not less than 4.57 m (15 ft) above the adjoining ground level (Figure 6).
- When selecting the PRV discharge line size reference ASHRAE 15 (9.7.9) for guidance. See below for additional information needed to assist in sizing.
- The two PRV discharge lines can be combined into one.
- See the table below for a reference of equivalent lengths for the piping lengths. The table is only for reference and must be validated as it does not account for all installation scenarios.

For reference only. Must have AHJ approval.
Refer to ASHRAE-15 9.7.9 for line sizing.

Separate PRV Lines ARC Tubing (OD)	Max Equivalent Length(ft) with 500 psi back pressure
5/8"	57
3/4"	215
7/8"	472
1-1/8"	2,000
1-3/8"	6,042
1-5/8"	14,919

PRV Lines Immediately Tee'd Together ARC Tubing (OD)	Max Equivalent Length(ft) with 500 psi back pressure
5/8"	Not Allowed
3/4"	32
7/8"	87
1-1/8"	457
1-3/8"	1,456
1-5/8"	3,663

- The refrigeration pressure relief valve discharge lines should be installed to prevent strains and stresses that exceed the structural strength of the pipe. The use of refrigerant rated vibration eliminators is permitted.
- Where necessary, provisions shall be made to protect piping from damage resulting from vibration, expansion, contraction, and structural settlement. The representation in (Figure 5) is reference only for PRV outlet piping and is not meant to indicate structural piping support.
- Do not route piping over fans. This will make replacing the fans difficult.
- ASHRAE 15 (9.7.9.2) Do not reduce the line size. It must be 5/8" or larger.

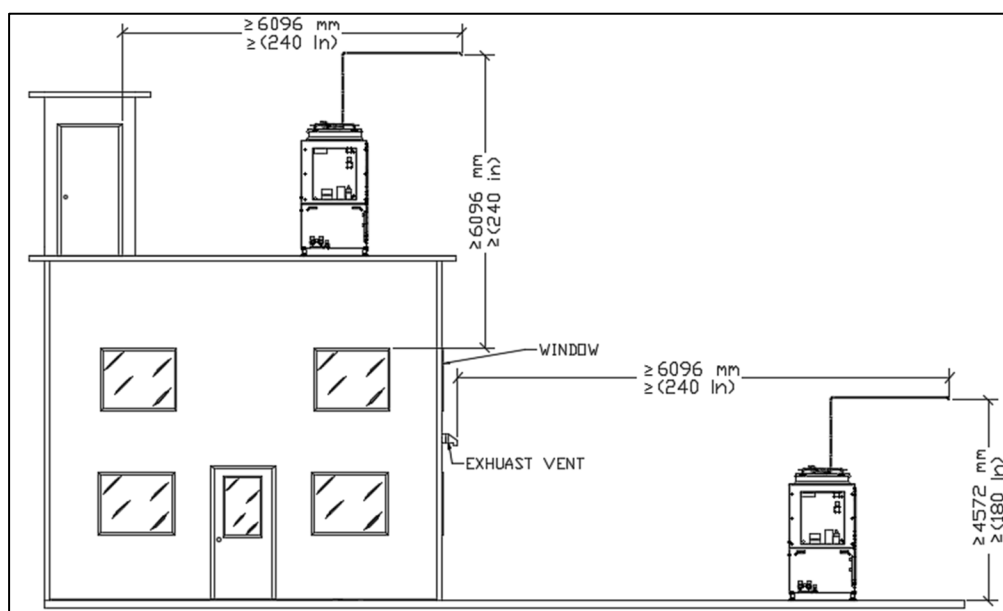


Figure 6 Dimensions required for PRV outlet locations

- Ensure the refrigeration pressure relief valve outlets of the field connections ends are pointing down so rainwater does not accumulate in them (Figure 7). Ensure moisture and debris is not allowed to accumulate and stop the PRV from opening.

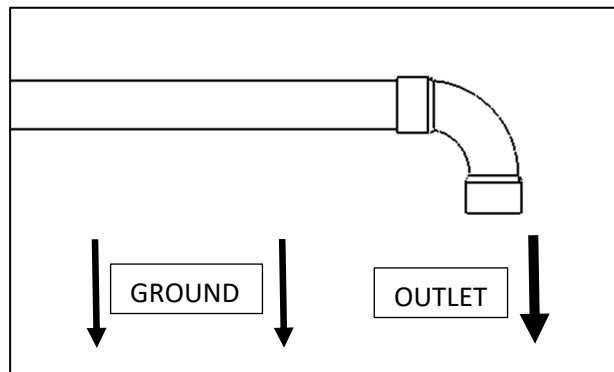


Figure 7 PRV outlet orientation

- An unventilated area where the appliance is installed shall be so constructed that in the event of any refrigerant leak, it will not stagnate to create a fire or explosion hazard.
- ASHRAE 15 (9.7.8.2 d) The termination point of the refrigeration pressure relief valve shall be made in a manner that prevents discharged refrigerant from spraying directly onto personnel that might be in the vicinity.
- ASHRAE 15 (9.7.8.2 e) The termination point of refrigeration pressure relief valve discharge lines shall be made in a manner that prevents foreign material or debris from entering the discharge piping.
- The appliance shall be stored in an area without continuously operating ignition sources
Example: open flames, an operating gas appliance, or an operating electric heater.
- Do not pierce or burn the appliance or any components.
- Be aware that refrigerants may not contain an odor.
- WARNING: Keep the chillers ventilation openings clear of obstruction.

Pressure Relief Valve Data:

- Manufacturer: Mueller Streamline Co.
- Model: A15504 - 650
- Set Pressure: 650 psig
- Rated Capacity Air = 24.4 (kg/min)
- Maximum back pressure is not more than 500psi.
- Length from the PRV outlet to the connection on the lid of the chiller: 4' 8" @ 5/8" OD.
- The length at 5/8" OD to reach the lid is not taken into consideration for the equivalent lengths provided in the table below.

3 Revision History

Revision	Date	Description of Change	Author
A	12/3/2025	Initial Release	AJM
B	1/5/2026	Added diagrams and additional notes.	AJM
C	3/11/2026	Added references to ASHREA 15, Disclaimer and engineering data.	AJM