

# **Back-Up Vents**

IOM Manual

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> Release Date: 01-September-2014 Document Number: DO-11033-F © Copyright 2002 by Purge Solutions, Inc. All rights reserved

Revision Record		
Description	Date	
Initial Release	01-Sep-14	
Storage Temperature Added	21-May-15	
Address Change	26-May-16	
Additional Information	23-Mar-18	
Added UKEx Certification	10-Jan-22	
Added Type 4X Ingress Protection	21-May-24	
	Description         Initial Release         Storage Temperature Added         Address Change         Additional Information         Added UKEx Certification	

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This shipment has been thoroughly inspected at the factory prior to its delivery to the carrier. After the shipment is picked up by the carrier, it becomes their responsibility. When the shipment arrives, make certain that it is undamaged and complete.

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# Section 1 How to Use This Manual

# Safety Considerations:

This chapter includes important information that must be read and understood by all persons installing, using, or maintaining this equipment. While this manual is designed to aid personnel in the correct and safe installation, operation, and maintenance of the systems described. Personnel must consider all actions and procedures for potential hazards or conditions that may not have been anticipated in the written procedures. If a procedure cannot be performed safely, it must not be performed until appropriate actions can be taken to ensure the safety of equipment and personnel. The procedures in this manual are not designed to replace or supersede required or common sense safety practices. All safety warnings listed in any documents applicable to equipment and perts used in or with the system described in this manual must be read and heeded before commencing work on any part of the system.



**NOTE:** Refer to all ATEX, CEC, IECEx, NEC, NFPA and UKEx certificates for any Special Conditions of Use. If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule of the certificate.



**NOTE:** Review all material and safety information in this manual and install in accordance with this document and all other applicable ATEX, CEC, IECEX, NEC, NFPA and UKEX standards.



**WARNING:** Failure to follow appropriate safety procedures or inappropriate use of the equipment described in this manual can lead to injury of personnel or equipment damage.



**WARNING – EXPLOSION HAZARD –** Do not disconnect equipment unless power has been removed or the area is known to be non-hazardous.

The following symbols are used throughout this manual to alert users to potential hazards or important information. *Failure to heed the warnings and cautions listed herein can lead to injury and equipment damage.* 

Document Label Definitions Used to Indicate Potential Hazards			
Symbol Label Description			
	WARNING:	Consists of conditions, practices, or procedures that must be observed to prevent injury or equipment damage.	
	CAUTION:	Risk of electric shock or high temperature parts may result in injury if proper precautions are not taken.	
	NOTE:	Emphasizes important or essential information.	

### **Locating Information:**

**NOTE:** In the interest of completeness, manuals and drawings included with the system may provide information pertaining to options not included with your equipment. Information in application notes supersedes general information in these documents. Information can be located in this manual using any of the following aids.

- 1. Table of Contents
- 2. Getting Help

### **General Safety and Operating Information:**

This section contains general safety and operating information applicable to electrical equipment installed within hazardous locations. This information must be understood by all persons installing, using, or maintaining the electrical equipment. This information is designed to aid personnel in safe installation, operation, and maintenance of any Back-Up Vents offered by Purge Solutions, Inc. It is not designed to replace or limit appropriate safety measures applicable to work performed by personnel. Any additional safety and operating measures that are required must be determined by and followed by personnel performing work on the electrical equipment.



**WARNING:** Deviation from the specified instruction or procedure steps can result in equipment malfunction, equipment damage, or injury to personnel.



**WARNING:** Return unit to factory for any repairs or replacement of parts, customer not permitted. This will void all warranties and hazardous area certification(s).



**WARNING:** Models PSO-SBUV-S and PSO-LBUV-T are excluded from the scope of the Type 4X rating.

# **General Precautions:**

Protective eyewear (glasses with side shields or goggles as appropriate) must be worn when servicing any part of electrical equipment. Hot components should be allowed to cool before servicing if possible. Other appropriate equipment or clothing must be used as required by the type of work performed. All applicable regulations and procedures must be followed for the work performed. **Before** beginning any work on the equipment, carefully consider all the potential hazards and ensure that appropriate measures are taken to prevent injury to personnel or equipment damage.



**CAUTION:** Electrical equipment components may be hot even when power is not applied. Take appropriate precautions to prevent injury from contact with hot items.



**CAUTION:** Applicable permits must be obtained and appropriate precautions must be taken to prevent possible injury to personnel or equipment damage when installing or maintaining this equipment.

### **Electrical Power:**

Appropriate precautions must be taken to prevent sparks that may ignite combustible materials that may be present in the enclosure environment that the Back-Up Vents will be installed. Precautions must also be taken to prevent electrical shock if the enclosure is opened. Power circuit breakers and wiring must be sized properly for the required current. All wiring installations must meet applicable electrical codes.

# **System Location:**

All Purge Solutions, Inc. Purge Back-Up Vents must be installed in a suitable location. All Purge Solutions, Inc. Back-Up Vents must not be installed in an area classification for which it is not rated and must be protected from temperature extremes and potentially high vibration. All Back-Up Vents from Purge Solutions, Inc. should not be mounted in an area with potentially high vibration. All Back-Up Vents from Purge Solutions, Inc. must be attached securely and appropriately at its final installation as instructed in this manual.

# Section 2 Specifications

### Features and Certifications

Back-Up Vents are certified for installation and use in ATEX, IECEx and UKEx when used with Purge Solutions, Inc. Type X, Y and Z Purge Systems for II 2 G Ex e IIC Gb, Gas Hazardous Areas

II 2 D Ex tb IIIC Db IP66, Dust Hazardous Areas

ATEX Certificate Number = DNV 09 ATEX 48607X

IECEx Certificate Number = IECEx DNV 09.0001X

Standards = IEC / EN 60079-0, IEC / EN 60079-2, IEC / EN 60079-7, IEC / EN 60079-11, IEC / EN 60079-18 and IEC / EN 60079-31

Back-Up Vents are certified for installation and use to CEC, NEC and NFPA when used with Purge Solutions, Inc. Type X, Y and Z Purge Systems for Class I, Division 1, Group A, B, C & D, T6, Gas Hazardous Areas
 Class II, Division 1, Group E, F & G, T6, Dust Hazardous Areas

Normal Operating Conditions		
Back-Up Vent Cracking / Opening Pressure	Between 0.8 to 1.0 Inch H2O (2.0 to 2.5 mbar)	
Back-Up Vent Mounting Orientation	Can be mounted vertical on top, left or right side of enclosure.	



**WARNING:** To help ovoid damage to Type X, Y or Z Purge and Pressurization System; maximum protective gas overpressure inside enclosure should not be more than 5 psig (0.35 bar).

Utility Requirements		
Maximum Protective Gas Supply	150 psig (10.3 bar)	
Pressure to Pressure Regulator	(Certification maximum pressure rating)	
Minimum Protective Gas Supply	20 psig (1.4 bar) <b>(Suggested to compensate</b>	
Pressure to Pressure Regulator	for enclosure leak rate.)	
Protective Gas Supply Quality	Water and oil-free, - 40°F (- 40°C) dew point, particles $\leq$ 5µ, ISA grade hydrocarbon free	

Environmental Conditions		
Operating Temperature Range	- 40°F to 150°F (- 40°C to 65°C)	
Storage Temperature Range	- 58°F to 167°F (- 50°C to 75°C)	
Used and Mounted	For Indoor and Outdoor Use	
Ingress Protection	NEMA 4X, IP66 and Type 4X	

Material Specifications			
Covers, Bodies, Fasteners and Fittings	Anodized Aluminum or 316 Stainless Steel		
O-Rings or Gaskets	EPDM		

**NOTE:** Purge Solutions, Inc. is NOT responsible for any misuse or improper installation of product, assumes no liability for special or consequential damages caused by use or misuse or improper installation of its products sold and assumes no liability for injury from use or misuse or improper installation of its products or attached products.

Back-Up Vent Model Number Matrix				
Size	Mounting	Material	Weight	Model Number
Small	Top Mount	Anodized Aluminum	1.3 lbs. (0.6 kg)	PSO-SBUV-TA
Small	Top Mount	316 Stainless Steel	2.4 lbs. (1.1 kg)	PSO-SBUV-TS
Medium	Top Mount	Anodized Aluminum	2.3 lbs. (1.0 kg)	PSO-MBUV-TA
Medium	Top Mount	316 Stainless Steel	4.0 lbs. (1.8 kg)	PSO-MBUV-TS
Large	Top Mount	Anodized Aluminum	4.9 lbs. (2.2 kg)	PSO-LBUV-TA
Large	Top Mount	316 Stainless Steel	11.8 lbs. (5.4 kg)	PSO-LBUV-TS
Small	Side Mount	Anodized Aluminum	1.3 lbs. (0.6 kg)	PSO-SBUV-SA
Small	Side Mount	316 Stainless Steel	2.4 lbs. (1.1 kg)	PSO-SBUV-SS
Medium	Side Mount	Anodized Aluminum	2.3 lbs. (1.0 kg)	PSO-MBUV-SA
Medium	Side Mount	316 Stainless Steel	4.0 lbs. (1.8 kg)	PSO-MBUV-SS
Large	Side Mount	Anodized Aluminum	4.9 lbs. (2.2 kg)	PSO-LBUV-SA
Large	Side Mount	316 Stainless Steel	11.8 lbs. (5.4 kg)	PSO-LBUV-SS

# Section 3 Introduction

# **Description:**

For installations that require a back-up pressure relief vent for the purged and pressurized enclosures, Purge Solutions, Inc. offers three sizes of back-up pressure relief vents; Small Back-Up Vents, Medium Back-Up Vents and Large Back-Up Vents. All three Back-Up Vents are constructed with an option of mounting on the top or sides of an enclosure and comes with all mounting hardware.



**WARNING:** Failure to heed the following information may lead to injury of personnel or equipment damage.



**CAUTION:** Electrical equipment components may be hot even when power is not applied. Take appropriate precautions to prevent injury from contact with hot items.



**WARNING:** Failure to allow adequate cooling of electrical equipment components with hot surfaces before opening the purged enclosure can lead to injury of personnel or equipment damage.

# Section 4 Installation

# **Back-Up Vents Installation Procedure:**

Review all of the material in this manual prior to installing and interfacing the Back-Up Vent to the enclosure. If you have any questions, please contact your local Purge Solutions, Inc. representative or the factory (refer Getting Help page 16). Refer to Small Back-Up Vent Side Mount, drawing number PSO-SBUV-S (page 10) or Small Back-Up Vent Top Mount, drawing number PSO-SBUV-T (page 11) or Medium Back-Up Vent Side Mount, drawing number PSO-MBUV-S (page 12) or Medium Back-Up Vent Top Mount, drawing number PSO-MBUV-S (page 13) or Large Back-Up Vent Side Mount, drawing number PSO-MBUV-T (page 13) or Large Back-Up Vent Side Mount, drawing number PSO-LBUV-S (page 14) or Large Back-Up Vent Top Mount, drawing number PSO-LBUV-S (page 15) for over all back up vent dimensions, hole sizes and locations required to interface and mount unit to enclosure.

### Step 1:

Make sure that area surrounding the enclosure the Back-Up Vent to be installed is known to be non-hazardous.

### Step 2:

Make sure that all power is removed from the electrical equipment located in the enclosure where the Back-Up Vent will be installed.

### Step 3:

Choose a mounting location for the Back-Up Vent on the enclosure in a location farthest from the purge supply gas inlet into the enclosure as specified in the type X, Y or Z purge unit IOM Manual for lighter or heavier than air hazardous material for single or multiple enclosure application.

### Step 4:

Drill or punch hole, per the sizes specified on drawing numbers PSO-SBUV-S, page 10 or PSO-SBUV-T, page 11 or PSO-MBUV-S, page 12 or PSO-MBUV-T, page 13 or PSO-LBUV-S, page 14 or PSO-LBUV-T, page 15.

### Step 5:

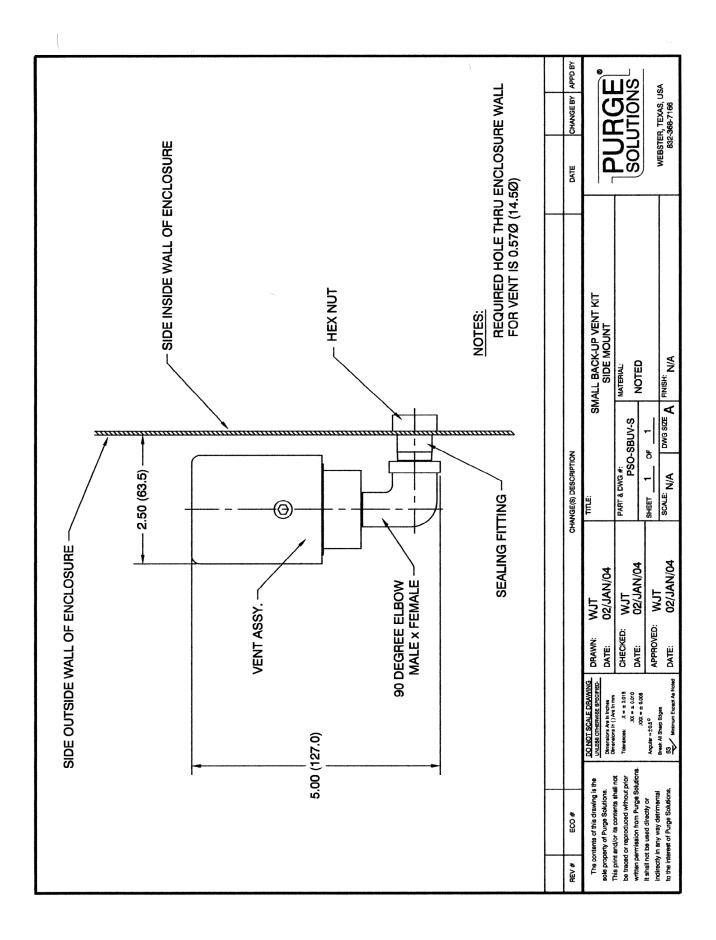
After required hole size has been drilled or punched into enclosure, align the Back-Up Vent to the mounting hole fabricated in Step 5.

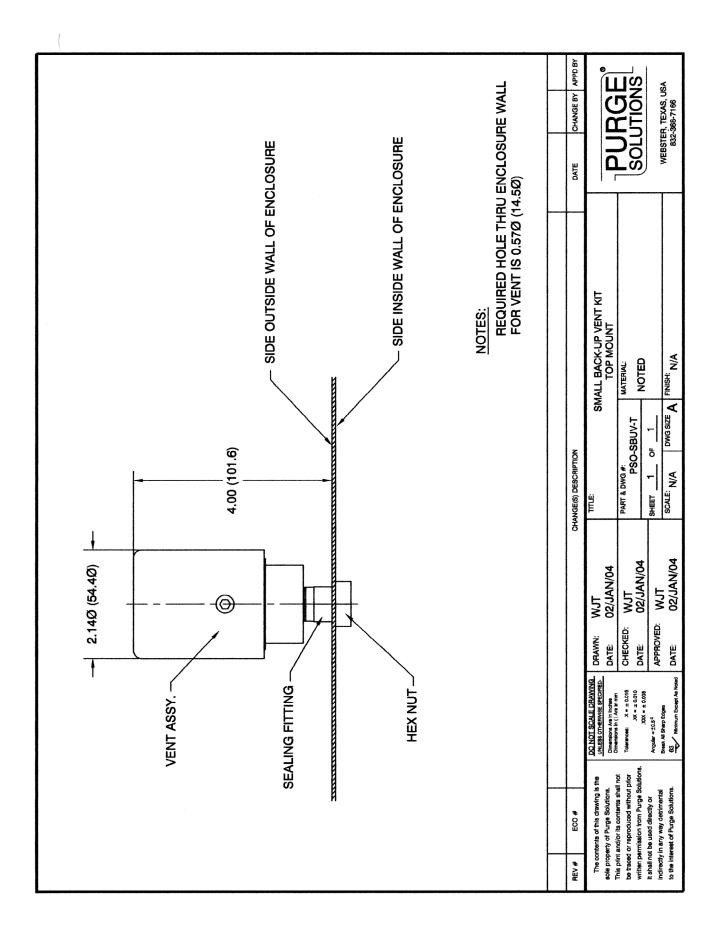
### Step 6:

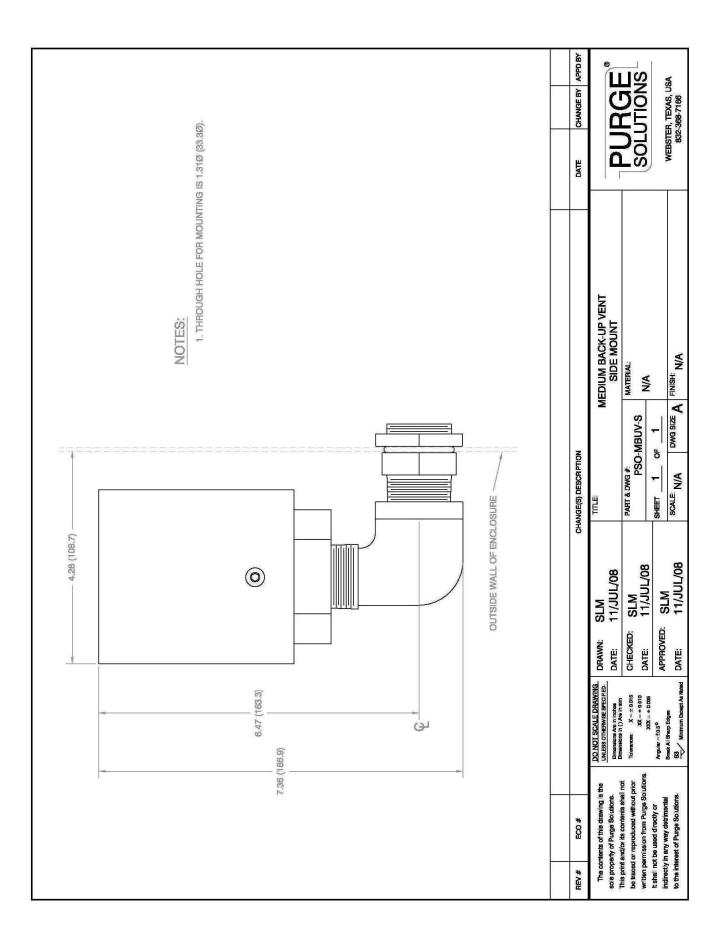
Using the jam nut provided with the unit, mount the Back-Up Vent to enclosure. Tighten jam nut until the O-ring seal is completely compressed against the surface of the enclosure, to a torque of 5 ft-lbs. (6.7 Nm).

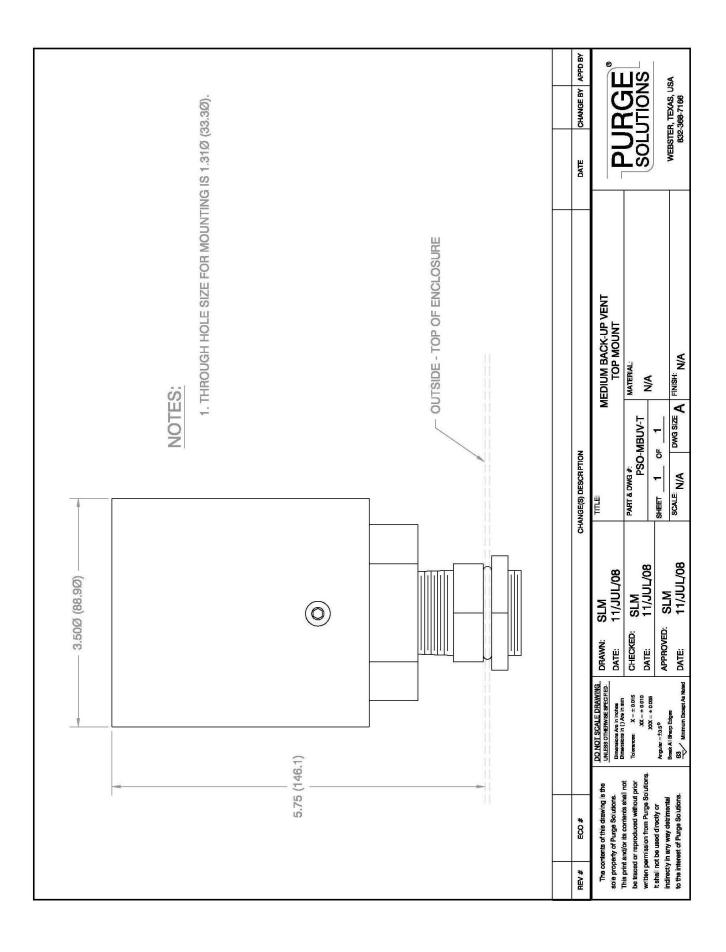
### Step 7:

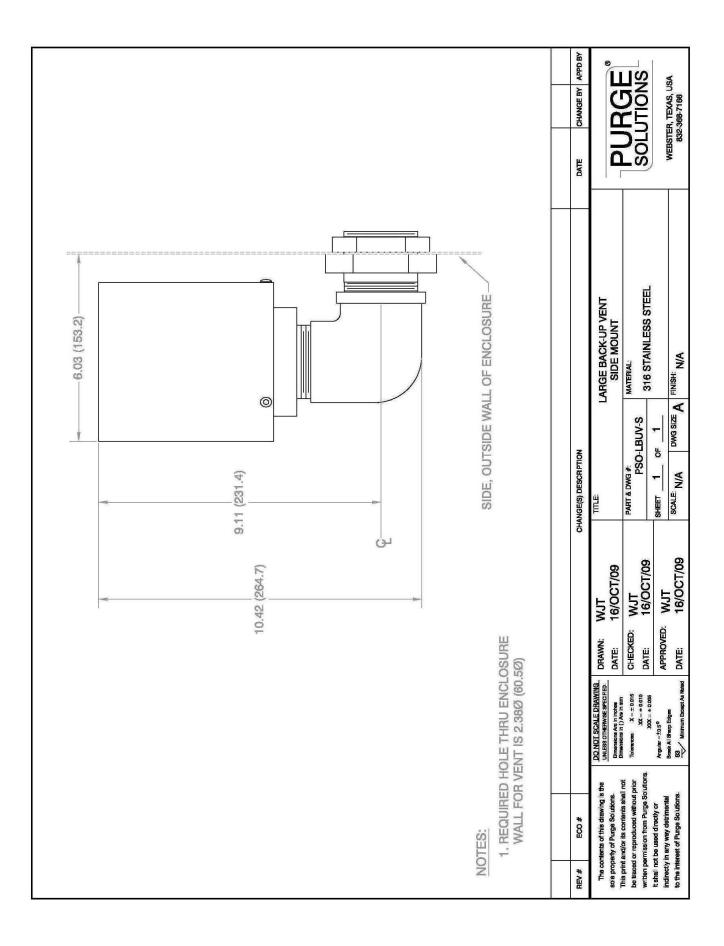
After the Back-Up Vent jam nut has been properly tightened, the Back-Up Vent is ready to protect the enclosure from overpressure.

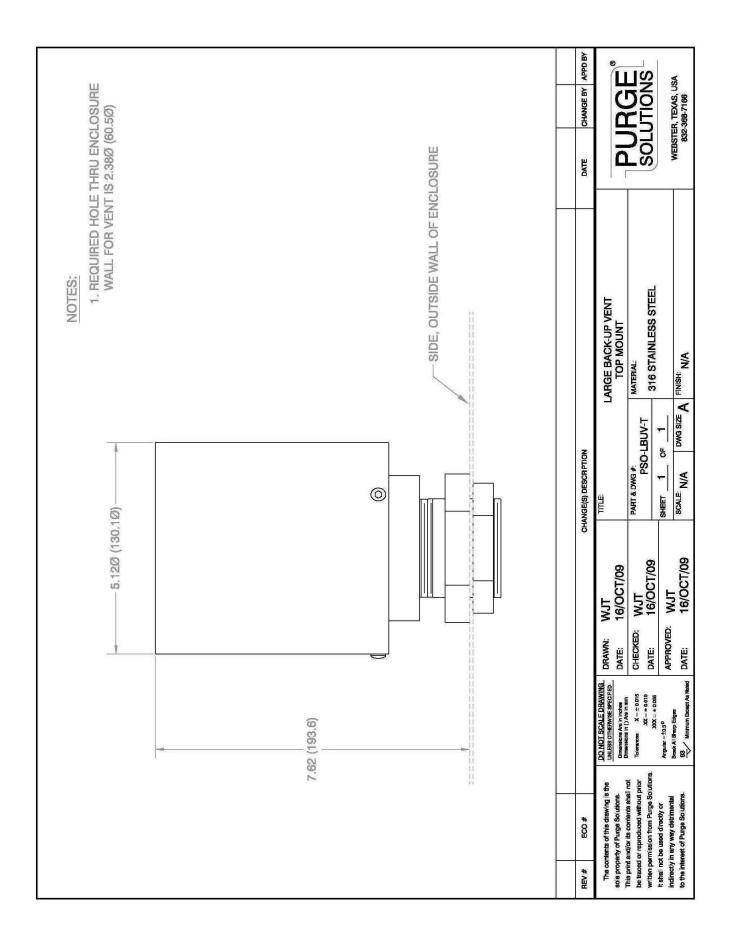












# Section 5 <u>Getting Help</u>

# **Getting Help:**

Answers to many questions concerning any optional products we offer are in this manual. If a problem or question is encountered that is not covered in the documentation provided, assistance is available Monday through Friday (except holidays), from 8 a.m. to 5 p.m. United States central time. To obtain assistance by telephone call Purge Solutions, Inc. at **832-368-7166**.

For assistance during times other than normal business hours, consult our World Wide Web Internet site at **http://www.purgesolutions.com**. This site includes equipment information, news releases, videos and other information. E-mail can be sent to **info@purgesolutions.com**.

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  operations.

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