



Dual Vent O₂ Release System

O&M Manual

Version 1; 01/04/2019
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The Leader in Nitrogen Generation Technology

VERSION HISTORY

Revision #	Implemented By	Revision Date	Approved By	Approval Date	Reason
0	K. Mellott	10/29/2018	M. Thomas	10/31/18	Initial Release
1	K. Mellott	01/04/19	M. Thomas	01/04/19	Wye Strainer Maintenance

Dual Vent O2 Release System – Specifications	
Medium	Air, Water, Deoxygenated Water, Nitrogen
Maximum Pressure	175 PSIG
Installation	Pipe Mounted, ½" NPT Female
Electrical Requirements	9-Volt, 1200mAh Lithium Battery
Ambient Temperature	40-140°F
Alarm Noise Level	65dB @ 3 ft.
Dimensions	19.5" x 4.5" x 11.5" (9" Above Pipe)
Weight	11.7 lbs.

-----Notes-----

TABLE OF CONTENTS

1 INTRODUCTION.....	5
1.1 Purpose.....	5
1.2 Audience.....	5
2 SAFETY GUIDELINES	6
3 INITIAL START-UP AND INSTALLATION	8
3.1 Piping Connections.....	8
3.2 Turning on the Dual Vent O2 Release System for the First Time.....	8
3.3 General Arrangement	9
4 SYSTEM OVERVIEW	10
4.1 Features	10
5 SYSTEM OPERATION	11
5.1 Instructions.....	11
5.2 Alarm Indicators and Reset.....	12
5.2.1 System Alarm.....	12
5.2.2 Low Battery Alarm	13
6 SYSTEM MAINTENANCE.....	13
6.1 Annual Battery Replacement.....	13
6.2 wye Strainer Maintenance.....	13

1 INTRODUCTION

1.1 PURPOSE

The Dual Vent O2 Release System provides a safe and easy way to vent air or nitrogen from a fire protection sprinkler system. The Dual Vent O2 Release System can be used with compressed air, water, deoxygenated water, and nitrogen.

This manual only provides proper installation and use of the South-Tek Systems Dual Vent O2 Release System. South-Tek Systems is not responsible for damages when using this in manners not approved by South-Tek Systems. The user(s) of this document should confer any questions with a qualified South-Tek Systems representative on its commissioning and correct use.

Please contact South-Tek Systems with any question or concerns at:

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The manual is based on the R&D performed by the South-Tek Systems Engineering Team and is patent pending,

WARNING: Read the manual in its entirety before installing or using the equipment.

1.2 AUDIENCE

This manual is intended for Fire Sprinkler Contractors and Building Maintenance Staff members and should be read in its entirety prior to operation.

Please contact your local Fire Sprinkler Contractor representative for any operation and maintenance questions not covered in this manual.

2 SAFETY GUIDELINES

Correct use of the Dual Vent O2 Release System is important for your personal safety and for trouble-free functioning of the product. Incorrect use can cause damage to the Dual Vent O2 Release System or may reduce the overall performance.

Note: Always following local and site safety regulations in conjunction with this manual. Correct use of the Dual Vent O2 Release System is important for personal safety. Incorrect safety practices can cause damage to the individual and equipment.

All personnel involved with installation, operations, and maintenance of the Dual Vent O2 Release System must follow safe working practices, OSHA, and local health/safety code regulations during the installation, operation, and maintenance of the unit.

Read carefully and act accordingly before installing, operating, or repairing the unit:

- Operator must use safe working practices and rules when venting.
- The owner is responsible for always keeping the unit in safe working conditions.
- Always use approved parts when performing maintenance and repairs. Make sure that replacement parts meet or exceed the original parts' specification.
- Only competent, trained, and authorized individuals, can install, operate, perform maintenance, and repair this system.
- Isolate incoming pressure to the Dual Vent O2 Release System, and depressurize the system before performing any mechanical work, including resetting the system.
- Wear safety glasses and ear protection while the equipment is operating as well as during maintenance.

WARNING: Components may be pressurized during operation. Pressurized gases are dangerous and may cause injury or death if handled or used inappropriately.

- Never allow pressurized gas to exhaust from an unsecured hose. An unsecured hose may present a whipping action, which can cause serious injury. If a hose bursts during use, immediately close all isolation valves if it is safe to do so.
- Always disconnect the supply power prior to performing electrical work.

Follow safe working practices, OSHA, and local health and safety regulation when installing and maintaining the Dual Vent O2 Release System.

WARNING:

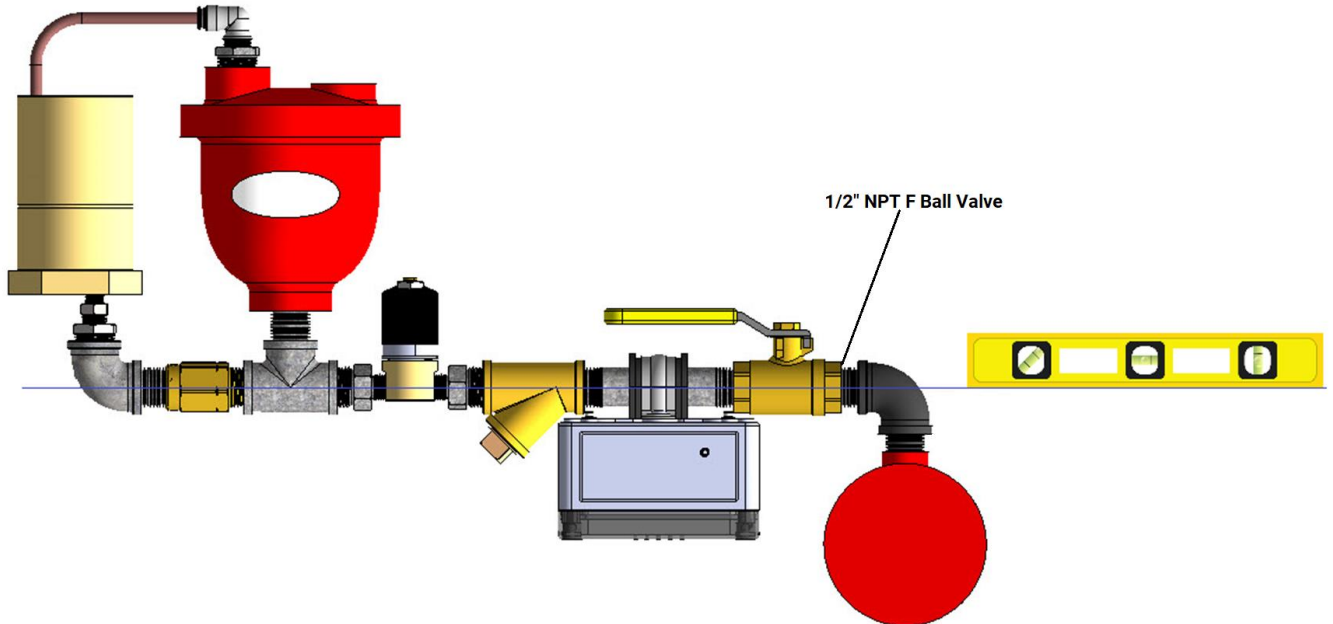
- This manual shall be read in its entirety before installing and operating the Dual Vent O2 Release System to prevent accidents and damage.
- Contact your local Fire Sprinkler Contractor if you detect a problem that you cannot solve with this guide.
- Only use the system in accordance with its designed purpose.
- Only service technicians, that are qualified to work on the sprinkler piping systems, are permitted to perform installation, maintenance, and repairs. Work performed by unqualified persons shall result in a voided warranty.
- Do not tamper with, experiment on, or exceed the technical specifications of the equipment.

3 INITIAL START-UP AND INSTALLATION

3.1 PIPING CONNECTIONS

The inlet connection port for the Dual Vent O2 Release System is a ½” NPT ball valve. Connect the Dual Vent O2 Release System so that system piping is parallel with the ground and level. The Dual Vent O2 Release System works best when installed at the highest point in the sprinkler system.

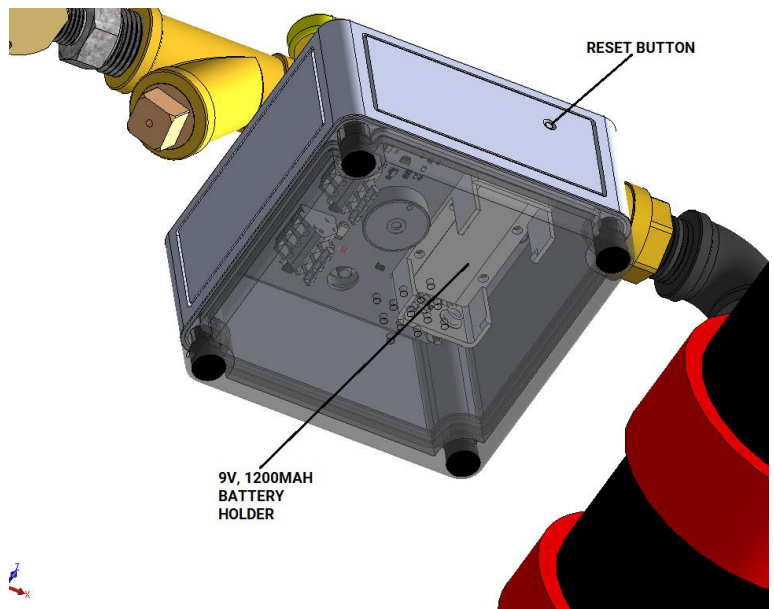
Note: Be sure to install the system so as not to block the visual or audible alarm indicators inside the control box.



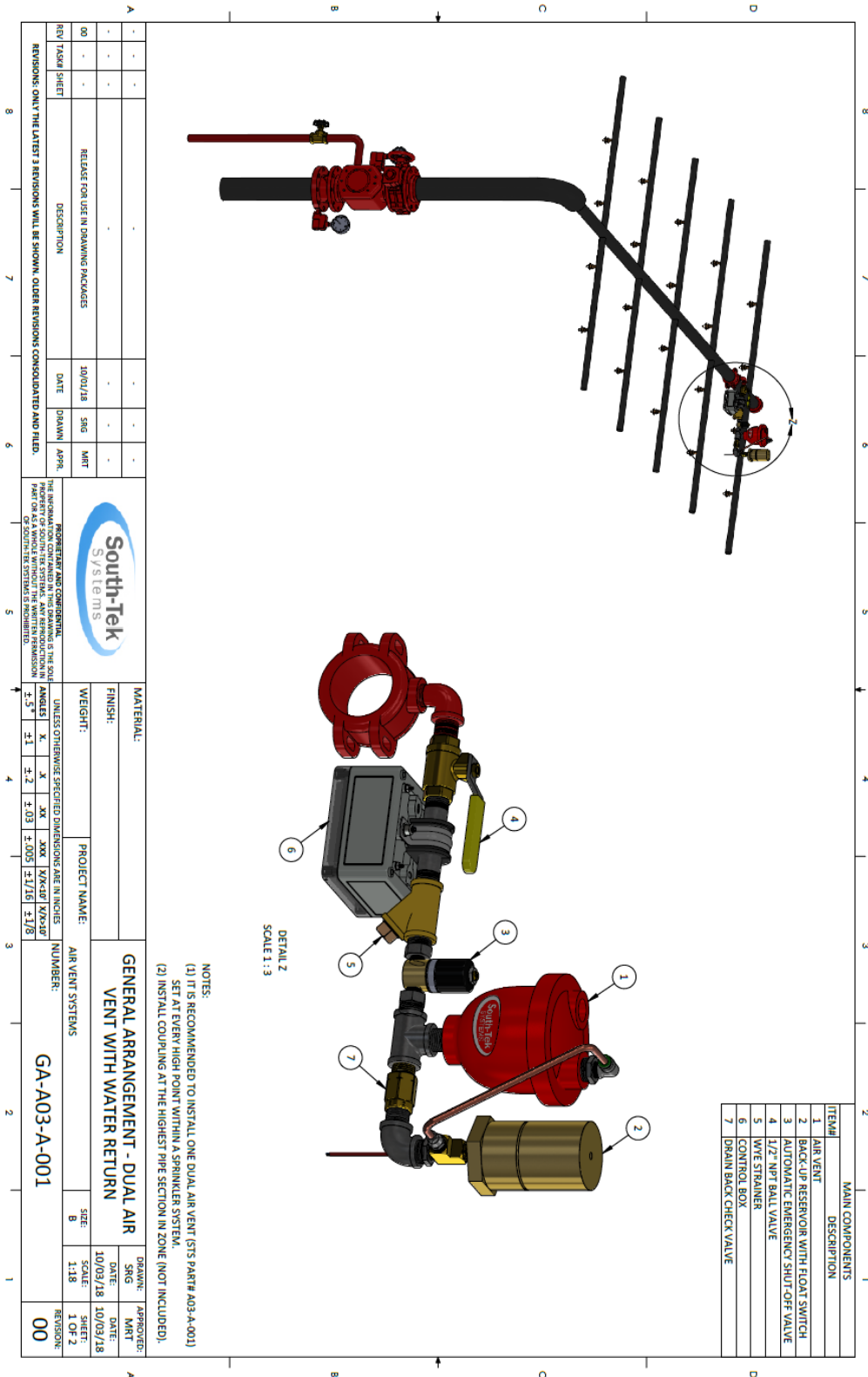
3.2 TURNING ON THE DUAL VENT O2 RELEASE SYSTEM FOR THE FIRST TIME

1. Install the new 9V, 1200mAh battery supplied.
2. Press the reset button while looking at the control board.
3. If the green LED blinks and the buzzer beeps once, the system is ready for normal venting and the failsafe is armed. This is considered active detect mode.

Note: If the red LED blinks instead, see Section 5.2.



3.3 GENERAL ARRANGEMENT



ITEM#	DESCRIPTION
1	AIR VENT
2	BACK-UP RESERVOIR WITH FLOAT SWITCH
3	AUTOMATIC EMERGENCY SHUT-OFF VALVE
4	1/2" NPT BALL VALVE
5	WYE STRAINER
6	CONTROL BOX
7	DRAIN BACK CHECK VALVE

NOTES:
 (1) IT IS RECOMMENDED TO INSTALL ONE DUAL AIR VENT (STS PART# A03-A-001) SET AT EVERY HIGH POINT WITHIN A SPRINKLER SYSTEM.
 (2) INSTALL COUPLING AT THE HIGHEST PIPE SECTION IN ZONE (NOT INCLUDED).

MATERIAL:		FINISH:		PROJECT NAME:		AIR VENT SYSTEMS NUMBER:		DRAWN:		APPROVED:	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		WEIGHT:		GA-A03-A-001		GENERAL ARRANGEMENT - DUAL AIR VENT WITH WATER RETURN		DATE:		DATE:	
ANGLES ±.5° ±1		±.2 ±.03 ±.005 ±1/16 ±1/8		SIZE:		SCALE:		10/09/18		10/09/18	
REVISIONS: ONLY THE LATEST 3 REVISIONS WILL BE SHOWN. OLDER REVISIONS CONSOLIDATED AND FLD.		REVISION SHEET		DATE		DRAWN		APPR		REVISION	
00		RELEASE FOR USE IN DRAWING PACKAGES		10/01/18		SIS		MRT		00	



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4 SYSTEM OVERVIEW

4.1 FEATURES

The Dual Vent O2 Release System includes the following:

- Isolation Ball Valve
- Wye Strainer
- Latching Solenoid
- Control Board
- Air Vent
- Overflow Reservoir with Float Switch

Isolation Ball Valve:

This ball valve can be used to isolate the Dual Vent O2 Release System from the rest of the sprinkler system during maintenance and localized draining.

Wye Strainer:

The brass wye strainer after the inlet ball valve is used to filter contaminants from entering the system. It can be used as a manual drain for the system when conducting maintenance by removing the plug.

Latching Solenoid:

This is a high pressure differential latching solenoid with low power consumption. It closes the system off in the case of vent failure.

Control Board:

The 9V battery-operated control board includes integrated LEDs, a buzzer, low-battery detection, and a reset button. This board controls the operation of the failsafe system, opening and closing the latching solenoid. It gives feedback through the LEDs and piezoelectric buzzer integrated on the board.

Air Vent:

The large air vent has an internal float that closes once water builds up in the vent. This vent is FM Approved.

Overflow Reservoir with Float Switch:

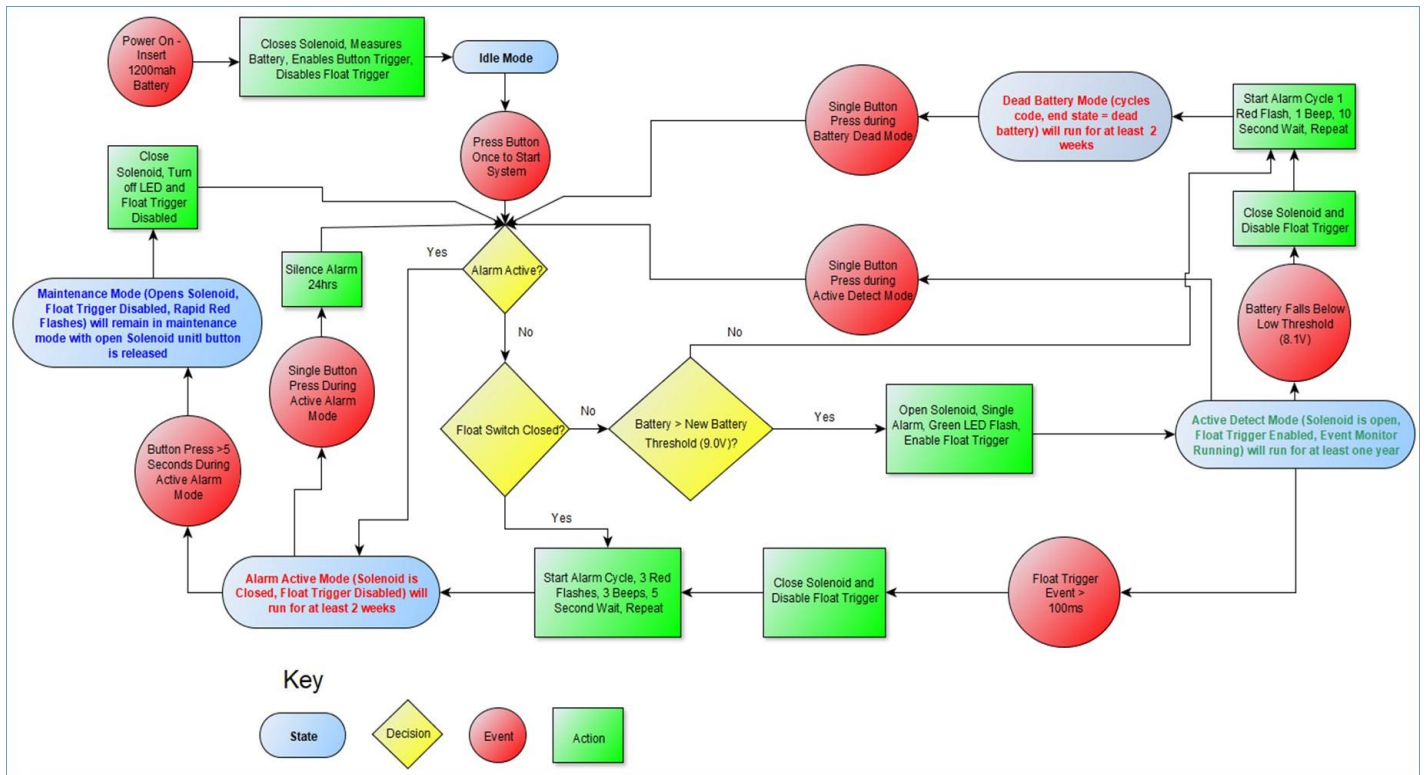
The Overflow Reservoir is a containment device to catch water should the air vent ever fail to close completely. When the integrated float switch detects water in the reservoir, it sends a signal to the control board to close the latching solenoid.

5 SYSTEM OPERATION

5.1 INSTRUCTIONS

The Dual Vent O2 Release System is intended to provide a safe and easy way to vent air or nitrogen from a fire protection sprinkler system. Follow the installation instructions above and only use in an approved environment. Please consult with your local provider for questions not answered in this manual.

The Dual Vent O2 Release System will continually monitor for at least one year on a single 9V, 1200mAh Lithium battery. Although the system is designed for 24-hour hands-free operation, routine battery replacement must be performed. See Section 6 **System Maintenance** for detailed maintenance instructions. Below is the flow chart for operation.



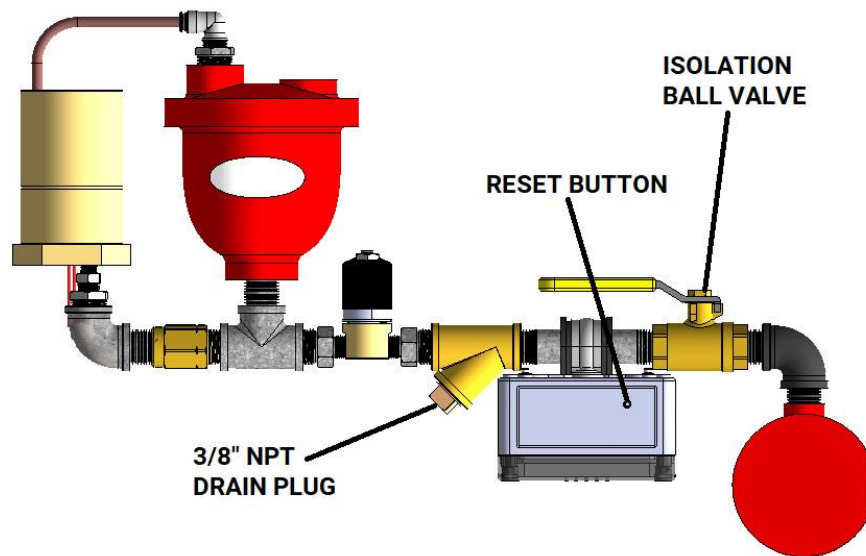
5.2 ALARM INDICATORS AND RESET

5.2.1 System Alarm

The System Alarm is designated by three (3) red LED flashes accompanied with three (3) beeps from the piezoelectric buzzer.

When this alarm is activated the air vent or the check valve in the system are leaking. When water has leaked into the overflow reservoir, the Dual Vent O2 Release System needs to be drained. The System Alarm can only be reset after draining the overflow reservoir.

5.2.1.1 Draining and Resetting After a System Alarm



Draining the Dual Vent O2 Release System overflow reservoir can be done in two ways:

- Closing the isolation ball valve and removing the plug from the bottom of the wye strainer to manually drain through the wye strainer.
- OR-
- Depressurizing and draining the sprinkler system to drain any Dual Vent O2 Release System water back into the sprinkler system using our patented drain back technology.

After one of these steps are completed, **press and hold** the reset button to drain the rest of the water out of the Dual Vent O2 Release System. The green LED should light up once the reset button is released so long as the battery still has an adequate charge. If instead the red LED illuminates when the reset is pressed, a new battery or more drain time may be necessary.

5.2.2 Low Battery Alarm

The Low Battery Alarm is designated by one (1) red LED flash accompanied with one (1) beep from the piezoelectric buzzer.

When the battery is drained, this alarm will close the latching solenoid preventing any venting air or water from making it past the solenoid. This acts as an extra failsafe in case routine system maintenance is missed.

To reset the low battery alarm, simply replace the battery with another 9V-1200mAh lithium battery and press the reset button. The green LED will flash, and the buzzer will beep once confirming the system is reset and ready for normal operation.

If the low battery alarm does not reset after replacing the battery, ensure the correct battery is being used. Try a different battery if the issue persists.

6 SYSTEM MAINTENANCE

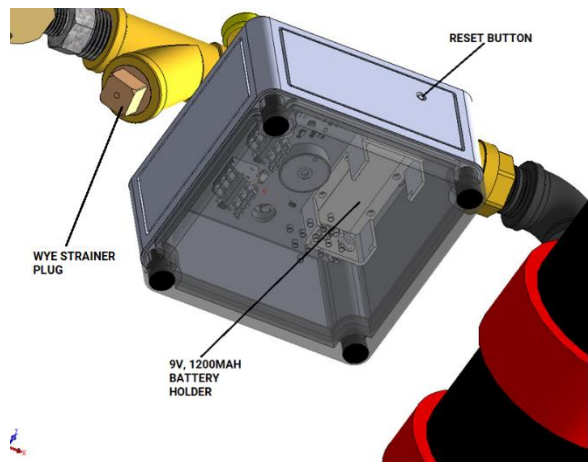
6.1 ANNUAL BATTERY REPLACEMENT

The vent requires an annual replacement of the 9V-1200mAh lithium battery.

Close the inlet ball valve, then remove the translucent cover of the vent with a ¼" or smaller standard screwdriver, replace the battery, and press the reset button.

Failure to replace this battery every year could result in a low-battery fault.

For any alarm maintenance, see **5.2**.



6.2 WYE STRAINER MAINTENANCE

Close the inlet ball valve, then remove and clean the wye strainer to prevent blockage of the vent. With the strainer out, disconnect the tube from the top of the secondary vent (via quick-connect fitting) and blow air back into the tube towards the primary vent to ensure its orifice is not clogged. Reconnect the tube, reinstall the wye strainer, and open the inlet valve.

APPENDIX A: WARRANTY

The Dual Vent O2 Release System is warrantied against any defects in workmanship and materials for 12 months (or 1000 hours) from the date of shipment from South-Tek Systems, whichever comes first. The purchaser has the liability to ensure that the system is fully inspected upon delivery and shall contact the appropriate shipping company to make any claims on damaged goods due to transit within that shipping company's policies. If the system is received with defects that are not due to shipping, a written claim should be submitted to South-Tek Systems within 1 week of receiving the shipment. South-Tek Systems can deny all other claims at their discretion.

All warranty work shall be done at a South-Tek System facility or at a Dual Vent O2 Release System Authorized Service Center. Only factory trained and authorized personnel are covered under warranty. Any part that is returned / repaired / replaced under warranty may be remanufactured or changed to a different specification at the factory's option. Any work performed by an unauthorized person/company or usage of non-factory parts, may void all warranties to the product.

Any item not manufactured by South-Tek may carry its own warranty from its manufacturer and will be warrantied by that manufacturer. All parts that need to be returned should be announced. Any item(s) that is returned to South-Tek Systems without an RMA number (return authorization number) may be denied and returned to the sender. Contact the factory for RMA #'s, prior to return shipment.

South-Tek Systems is not liable for damages caused by normal wear and tear, water, fire, erosion, corrosion, explosion, misuse, oil/gas vapors or unauthorized modifications. South-Tek Systems is also not liable for any losses, damages, or cost of delays, including incidental or consequential damages. There are no warranties or guarantees, expressed or implied, including the warranties of merchantability or fitness for a particular purpose or use, other than those warranties expressed herein.

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-----Last Page-----