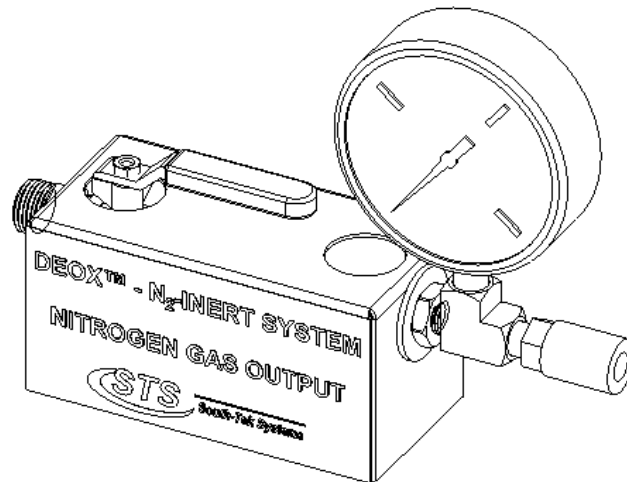
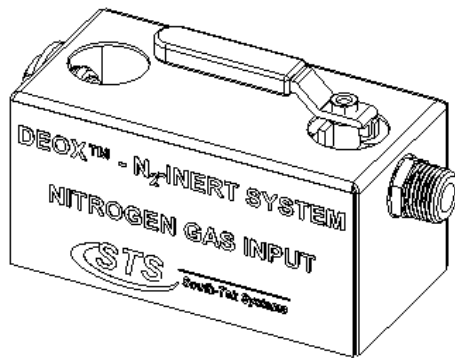




# DEOX™ NITROGEN INERTING SYSTEM O&M MANUAL

Revision 1  
Date 06/10/16



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## REVISION HISTORY

Revision #	Revision Date	Approved By	Approval Date	Reason
0	4/15/16	J. Nguyen	4/15/16	Initial Release
1	6/10/16	J. Nguyen	6/10/16	Updated Design

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# 1 INTRODUCTION

## 1.1 PURPOSE

South-Tek designed the N<sub>2</sub>-Inert System™ to rapidly pre-fill any Wet Fire Protection System (FPS) with 98% or greater nitrogen. It is engineered for easy integration and allows for a quick return to normal service. The N<sub>2</sub>-Inert System™ displaces all the air in the FPS piping system, containing harmful oxygen, and replaces it with nitrogen. By minimizing the oxygen, the air water interface is lessened when water is filled to the system, therefore reducing the likelihood of electrochemical (oxygen driven) corrosion. The package includes both the injection port and exhaust/sampling port. When this technology is utilized with South-Tek's DeOx™ FPS 1 Corrosion Inhibiting System and the O<sub>2</sub>-Release System™ it will increase the performance and health of any Wet Fire Protection System!

### FEATURES AND BENEFITS

- Quick and easy installation
- Quick-Connect fittings for connections
- Injection port and exhaust/sampling port
- Optional O<sub>2</sub> Quick-Check Analyzer
- Minimal maintenance

## 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.

## 1.3 IMPORTANT INFORMATION

Always follow manuals and instructions from STS when servicing your system.

## 2 SAFETY GUIDELINES

### 2.1 GENERAL

Correct use of the Wet FPS N<sub>2</sub>-Inert System™ is important for your personal safety and for trouble-free functioning of the Wet FPS N<sub>2</sub>-Inert System™. Incorrect use can cause damage to the Wet FPS N<sub>2</sub>-Inert System™ or may reduce the overall performance. **Note:** While the Wet FPS N<sub>2</sub>-Inert System™ does not require any electrical power, it is recommended to not install near other equipment that is sensitive to exposure of water.

All personnel involved with installation, operations, and maintenance of the Wet FPS N<sub>2</sub>-Inert System™ must follow safe working practices, OSHA, and local health/safety code regulations during the installation, operation, and maintenance of the unit.

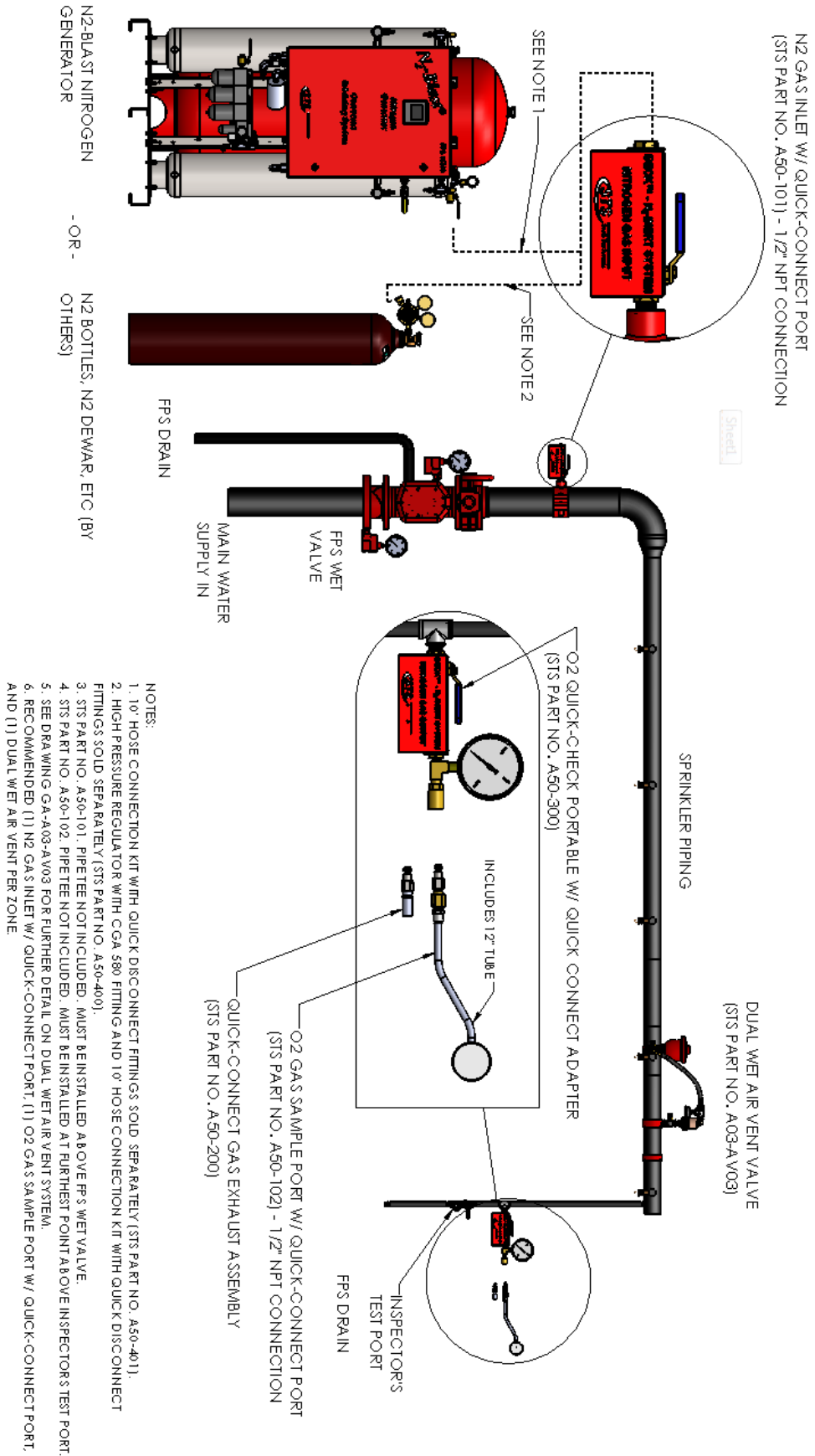
#### Warning:

- This manual shall be read in its entirety before installing and operating the Wet FPS N<sub>2</sub>-Inert System™ to prevent accidents and damage.
- Contact your local Fire Sprinkler Contractor if you detect a problem that you cannot solve with this manual.
- Only use the system in accordance with its designed purpose.
- Only service-engineers, that are qualified to work on the FPS piping system, 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 SYSTEM OVERVIEW

The Wet FPS N<sub>2</sub>-Inert System™ is intended to purge the air from the wet fire protection system (FPS), and replace it with high quality nitrogen to minimize oxygen levels in the piping system which will help against corrosion in the piping system.

South-Tek's Wet FPS N<sub>2</sub>-Inert System™ is specifically designed to deliver nitrogen into the wet fire sprinkler systems. It is fully assembled and ready to use once properly installed per the instructions.



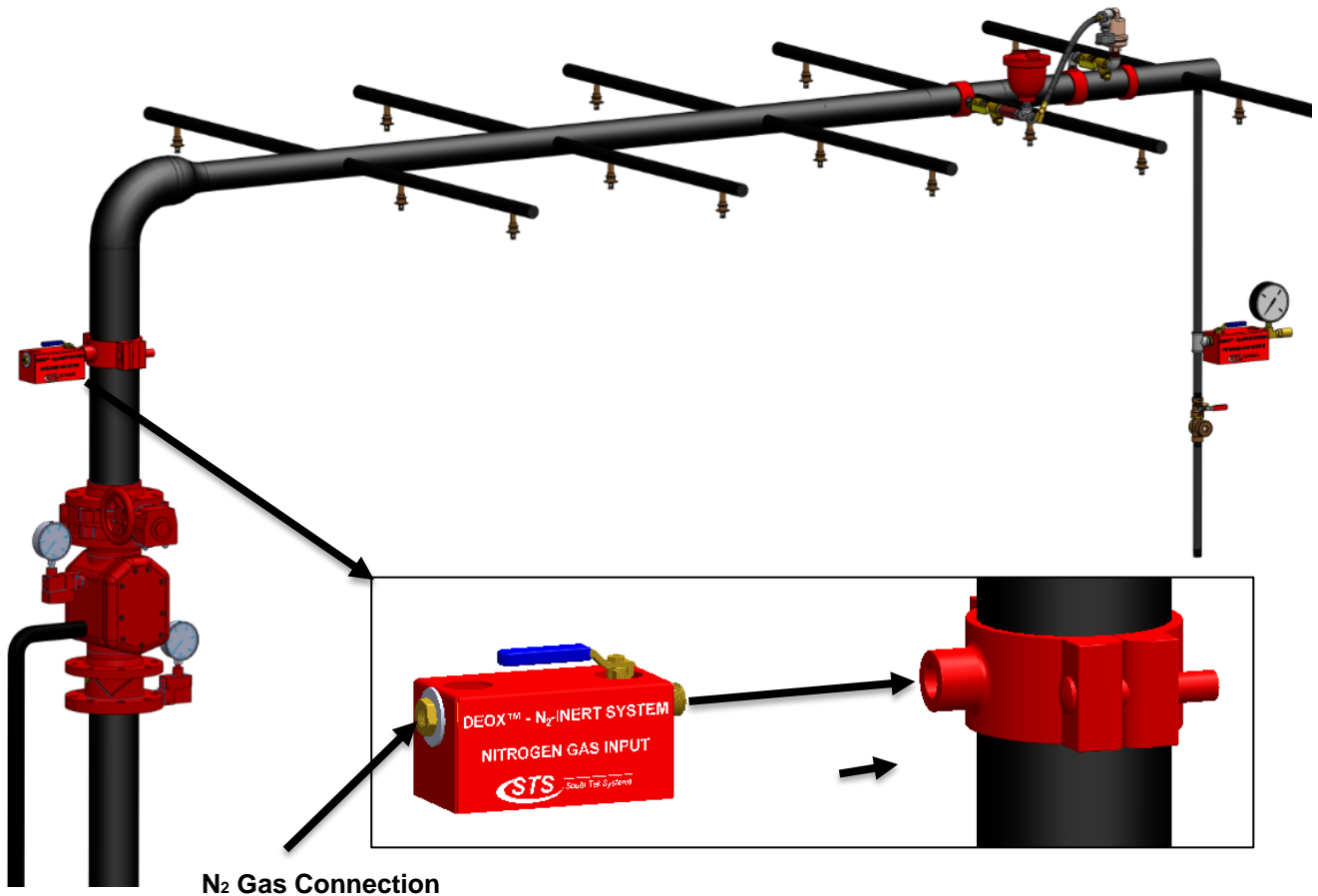
### 3.1 INSTALLATION

The Wet FPS N<sub>2</sub>-Inert System™ include the following:

- N<sub>2</sub> Gas Inlet Port Assembly
- N<sub>2</sub> Gas Output with Quick Connect Port Assembly
- Optional O<sub>2</sub> Quick-Check Portable Gas Analyzer
- Optional High Pressure Regulator

#### N<sub>2</sub> Gas Inlet Port Assembly (STS Part No: A50-101):

Installer must first install a ½" NPT pipe tap above the main water check valve. Once the ½" NPT pipe tap is installed, the "N<sub>2</sub> Gas Inlet Port Assembly" can be installed to the ½" NPT port.

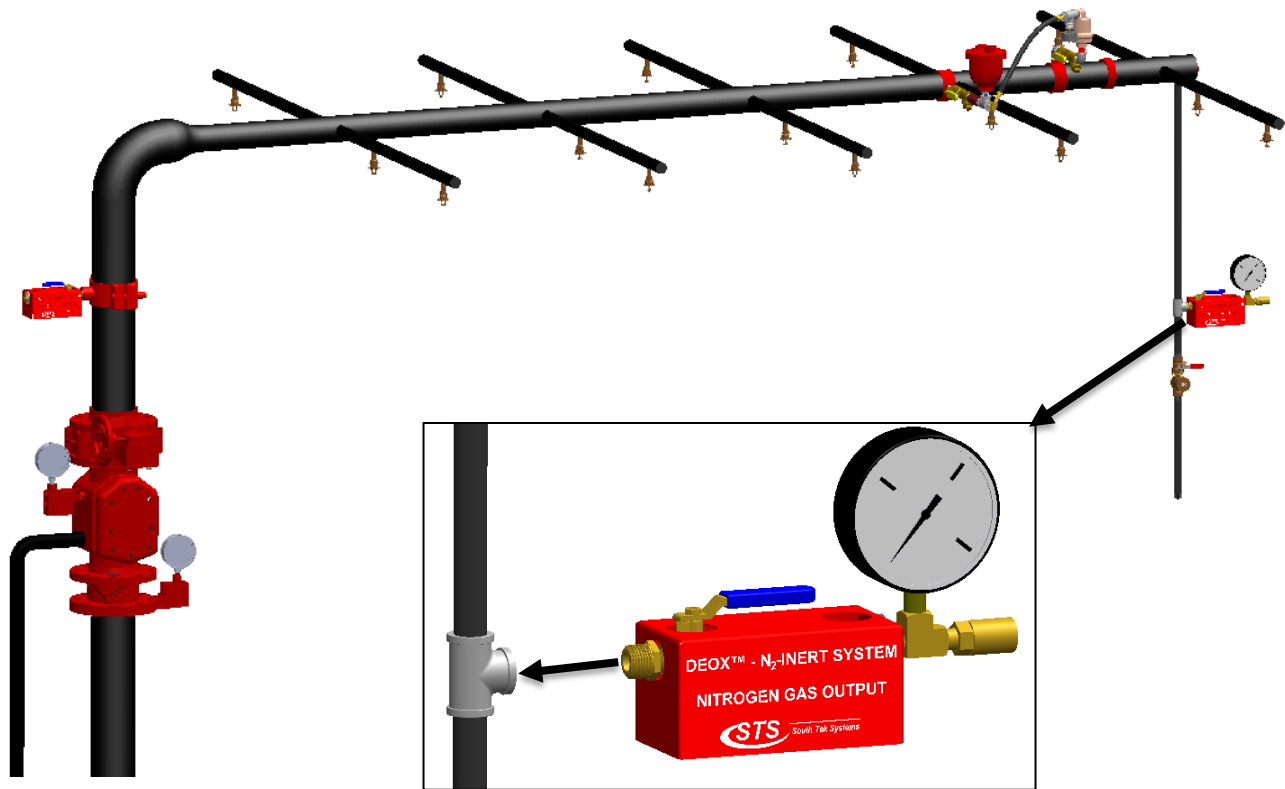


#### N<sub>2</sub> Gas Output with Quick-Connect Port Assembly (STS Part No: A50-102):

Installer must first install a ½" NPT pipe tap above the Inspector's Test Port. Once the ½" NPT pipe tap is installed, the "N<sub>2</sub> Gas Output with Quick-Connect Port" can be installed to the ½" NPT port.

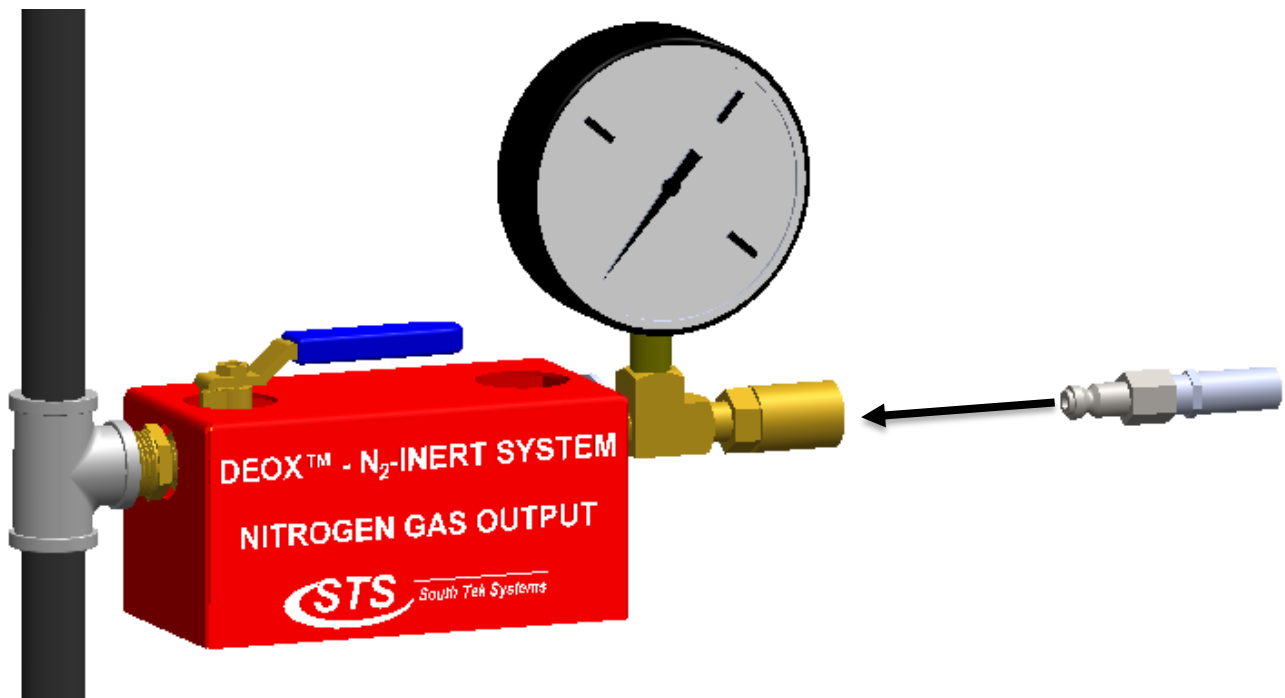






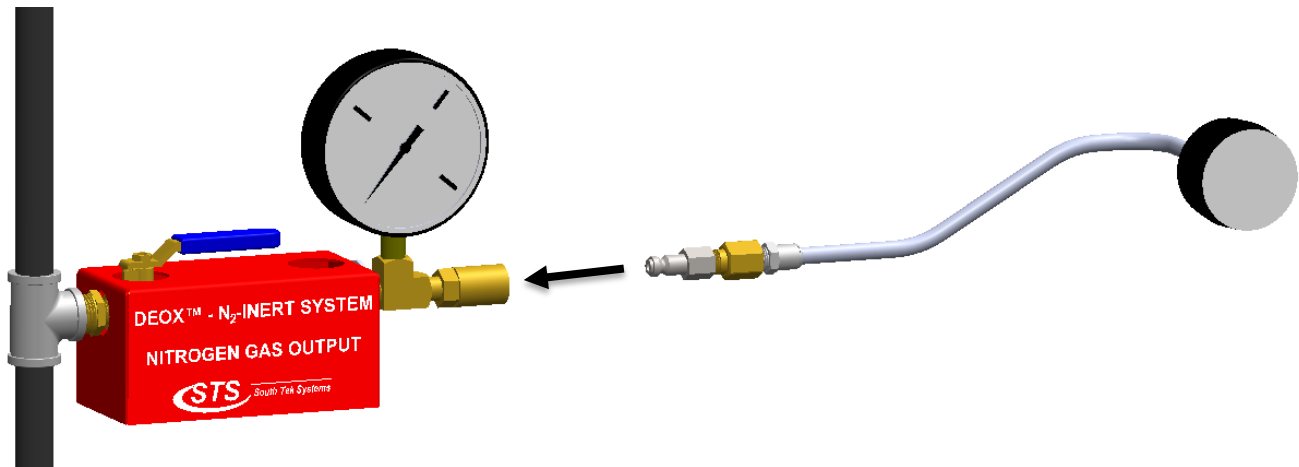
Quick-Connect Gas Exhaust Adapter - (STS Part No: A50-200):

The Quick-Connect Gas Exhaust Adapter is used to purge the pressure from the FPS System. Connect the adapter and compressed gas will exhaust to the atmosphere.



O₂ Quick-Check Portable with Quick Connect Adapter - Optional (STS Part No: A50-300):

Once the O<sub>2</sub> Gas Sample Port with Quick-Connect Port is installed, the user can sample O<sub>2</sub> gas quality in the FPS piping system by attaching the O<sub>2</sub> Quick-Check Portable with Quick-Connect Adapter as shown below:



## 4 SYSTEM OPERATION

Once the N<sub>2</sub> Gas Inlet with Quick-Connect Port and O<sub>2</sub> Gas Sample Port with Quick-Connect Port are installed on the FPS system, nitrogen inerting to the system can be done as follows:

1. Connect the nitrogen source to the N<sub>2</sub> Gas Inlet with Quick-Connect Port and make sure both ball valves on the N<sub>2</sub> Gas Inlet with Quick-Connect Port and O<sub>2</sub> Gas Sample Port with Quick-Connect Port are open.
2. Open the nitrogen source (bottles, dewar, or Nitrogen Generator) and allow nitrogen to start filling up the FPS system.
3. Monitor the back-end system pressure by using the pressure gauge on the O<sub>2</sub> Gas Sample Port with Quick-Connect Port.
4. Once the pressure reaches 20 PSIG, turn off the nitrogen source, and then attached the Quick-Connect Exhaust Adapter to the O<sub>2</sub> Gas Sample Port with Quick-Connect Port.
5. Once the pressure drops back to 5 PSIG, remove the Quick-Connect Exhaust Adapter and connect the O<sub>2</sub> Quick-Check Portable with Quick Connect Adapter and check the O<sub>2</sub> purity. The O<sub>2</sub> purity should be 1.5% or less. If it is not, repeat steps 2 thru 5 until the reading is 1.5% or less.
6. Once it's 1.5% or less, the FPS system has been inerted with high quality nitrogen and the nitrogen inerting process is complete.

## 5 KEY CONTACTS

Contact your local provider/installer for any questions regarding the installation and operation of the system. They will be best suited to answer your questions and your quickest solution to any issues you may have. For questions that they cannot answer, please contact South-Tek System's Service Department.

South-Tek Systems  
2940 Orville Wright Way, Wilmington, NC 28409  
Phone: 888-526-6284 | E-mail: [info@southteksystems.com](mailto:info@southteksystems.com)  
Website: [www.southteksystems.com](http://www.southteksystems.com)

## APPENDIX A: WARRANTY

The Wet FPS N<sub>2</sub>-Inert System™ is warranted against any defects in workmanship and materials for 12 months from the date of shipment from South-Tek Systems. 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 shall 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 Systems facility or at a Wet FPS N<sub>2</sub>-Inert 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 warranted 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, quality of supply water, or improper maintenance. South-Tek Systems is not liable for any losses (including N<sub>2</sub>), 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.

For Claims, contact South-Tek Systems LLC at:

tel (888- 526-6284 fax (919) 847-0255

Email: [support@southteksystems.com](mailto:support@southteksystems.com)

Or write to:

South-Tek Systems, Warranty Claims,  
2940 Orville Wright Way,  
Wilmington, NC 28405