



ETO Nitrogen Gas Generation Systems

Presented by:
South-Tek Systems

The Leading Manufacturer/Designer of
Nitrogen Generation Systems for Heat
Treating



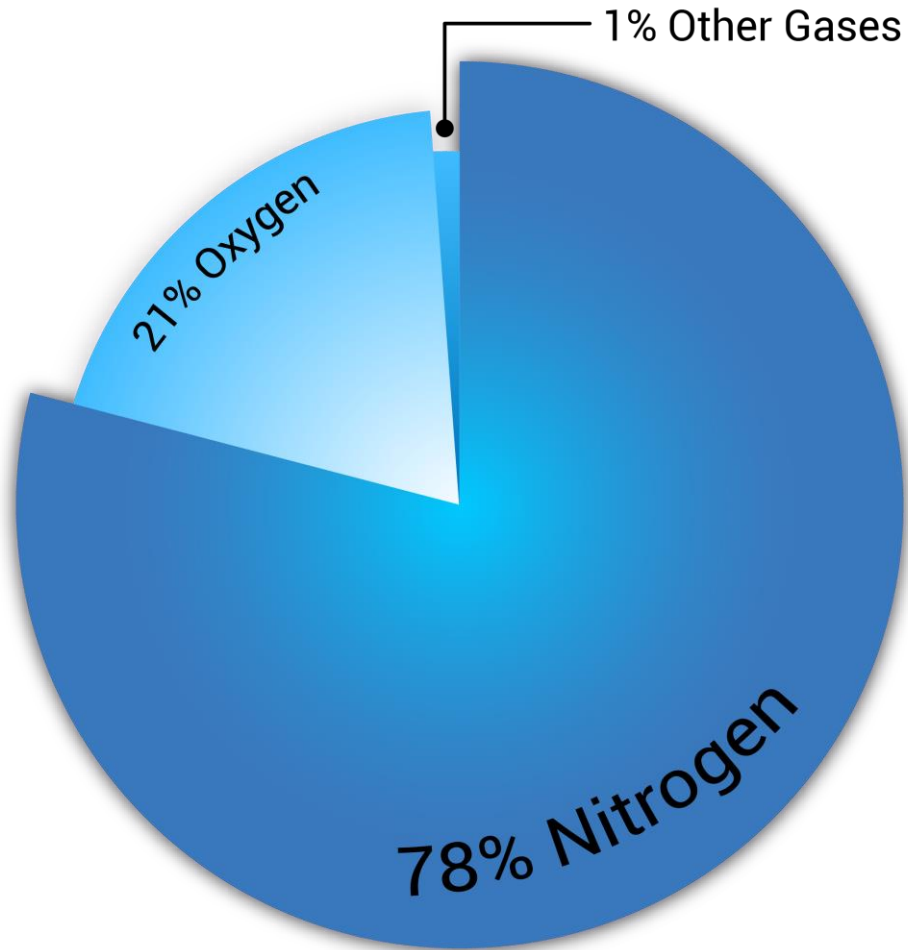
About South-Tek Systems

South-Tek Systems is the leading designer and manufacturer of Nitrogen Generators for worldwide distribution, serving a wide range of industrial, lab, and military applications. Our technology is safe, reliable, and cost effective. Generate your own nitrogen at your site and reduce your nitrogen costs by up to 90%.

- Based in Wilmington, NC since 1997
- We ARE Nitrogen!
- Flexible & Custom Engineering
- Various Approvals/Listings Available
- Application and Industry Know How
- Nationwide Support through STS Certified Representatives
- Military products are GSA Certified or have an NSN (*tried, tested and proven*)
- 24/7 Internal Service and Support
- And Much, Much, More!!



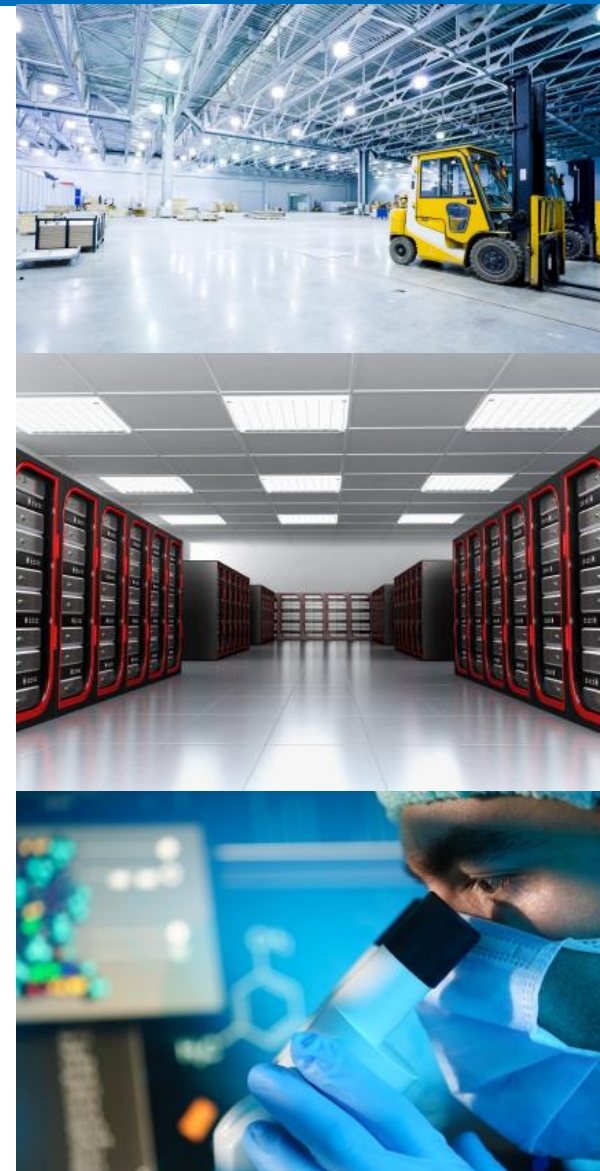
WHY NITROGEN?



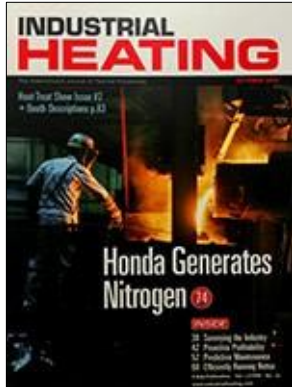
- Nitrogen makes up 78% of our atmosphere. It is inert, and therefore more stable than oxygen.
- South-Tek's *tried, tested, and proven* Nitrogen Generation solutions safely separate the readily available nitrogen from within the air we breathe.
- By displacing oxygen in favor of nitrogen, a stable, clean atmosphere is created. Corrosion is inhibited, perishable items are better preserved, and oxygen combustibility and/or contamination is eliminated.

Why N2 Generators (Specifically STS)?

- Automatically generate your own nitrogen on demand
- No missed deliveries, escalating costs, or contracts to sign
- Eliminate your ever increasing gas contract – rates will continue to increase yearly based on CPI
- Reduce your nitrogen costs by up to 90%
- Quick return on investment (ROI), potentially immediate – liquid nitrogen will never yield an ROI
- Tried, Tested & Proven
- Designed for little to no downtime with easy to service/change-out parts
- Custom engineered GA drawing with every installation
- 24/7 technical support
- UL 508A Industrial Control Panel Approved Manufacturer
- DAS certificate with each system
- Onsite commissioning & training with certified South-Tek technician
- Flexible financing options available



STS Applications: *Diversity, yet understanding the application is the key*



Heat Treating

Ex. Exclusive provider to Honda USA and others – creating an inert atmosphere within furnaces



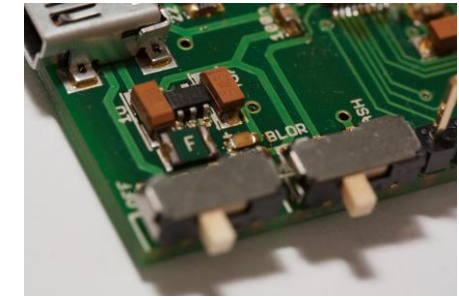
Laser Cutting

Ex. Blanketing laser beams w/ N_2 increases sheet metal cutting production by 60%



Laboratory

Ex. Used in lab equipment in order to reduce any risk of running out of gas at a potentially critical point



Electronics

Ex. used with printed circuit board manufacturing during processes including reflow soldering and selective soldering



Military

Ex. Hundreds of Portable EOMSC Shelters – Optics Purging



Food Packaging

Ex. Frito-Lay uses South-Tek equipment to blanket every bag of chips before sealing



Chemical

Ex. Eliminates the presence of oxygen and moisture and prevents oxidation from occurring



Power & Utilities

Ex. utilized successfully in power plant boilers



Supplying Nitrogen in Your Process

BUY IT:

1. High Pressure Bottles = Up To \$25.00+/CCF
2. Dewars (Small Liquid Tanks) = Up To \$5.50+/CCF
3. Bulk Liquid N2 Tanks = Up To \$1.31+/CCF

MAKE IT:

1. PSA (Pressure Swing Adsorption) = Up To \$.10



HIGH PRESSURE BOTTLES:

- Holds 245 SCFH of N₂
- 2.45 CCF in each
- Storage pressure up to 3500 PSIG
- Rental tank fees
- Delivery fees
- Plant down time due to running out

Up To \$25+/CCF



DEWARS:

- Holds 4,500 SCFH of N₂
- 45 CCF in each
- 1 – 2 % daily evaporation rate
- Even with no use, empty in 60 days
- Requires handling by personnel
- Delivery and rental fees

Up To \$5.50+/CCF



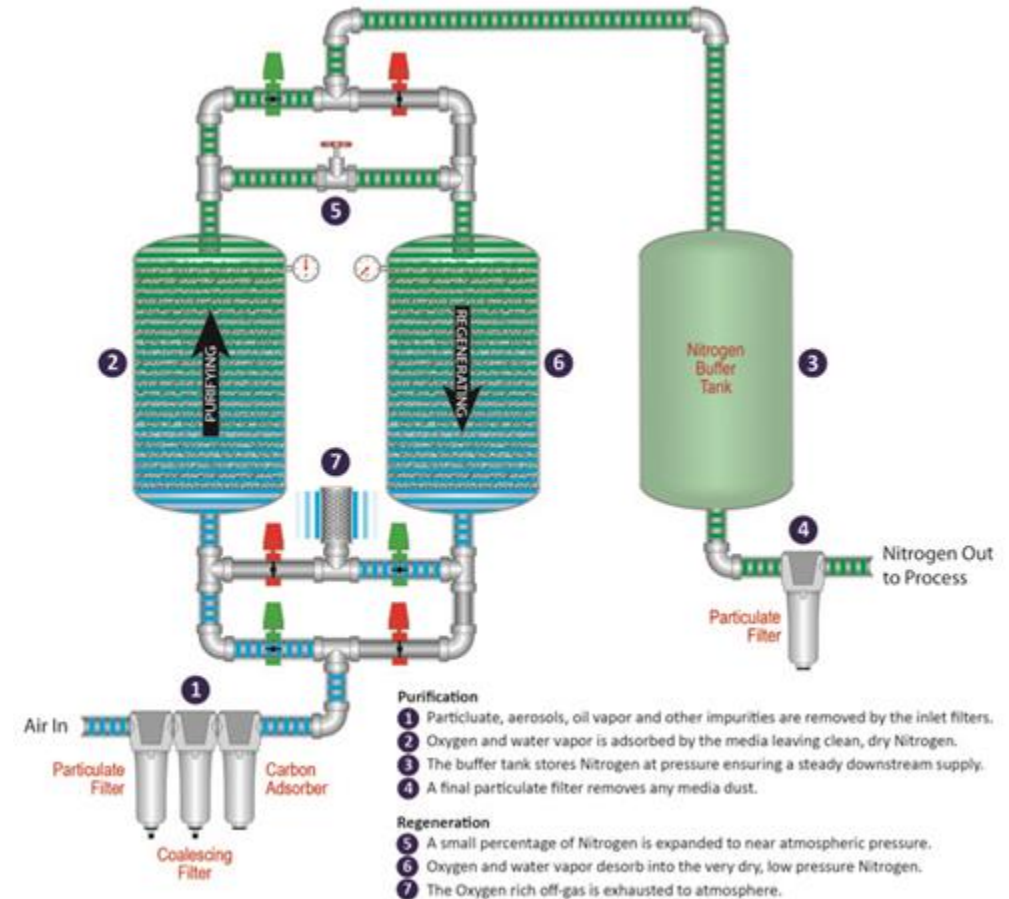
LIQUID N₂ TANKS:

- Offered only with a gas contract
- Range of CCFs
- 1 - 2% daily evaporation rate
- Potential gas runouts
- A never ending operating expense (!)
- Difficult to track consumption
- Overage fees
- Delivery and rental fees

Up To \$1.31+/CCF

MAKE IT: PSA (Pressure Swing Adsorption)

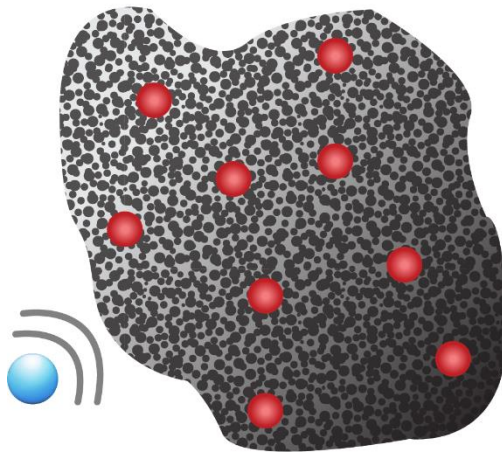
- Carbon Molecular Sieve (CMS) adsorbs oxygen under pressure while allowing nitrogen to pass through.
- One sieve bed pressurizes, producing high purity N₂. Once saturated, the CMS is flushed by depressurizing the sieve bed, releasing the O₂ and other molecules to atmosphere, and the second sieve bed begins the process again.
- Skid-mounted units can supply up to 25,000+ SCFH of continuous Nitrogen.
- Purities range from 95 - 99.999+% (more pure than Liquid N₂!)
- PSA systems life expectancy is 20+ years.
- 2 – 3x (or more) efficient as Membrane technology.



MAKE IT: Carbon Molecular Sieve (CMS)

Carbon particle

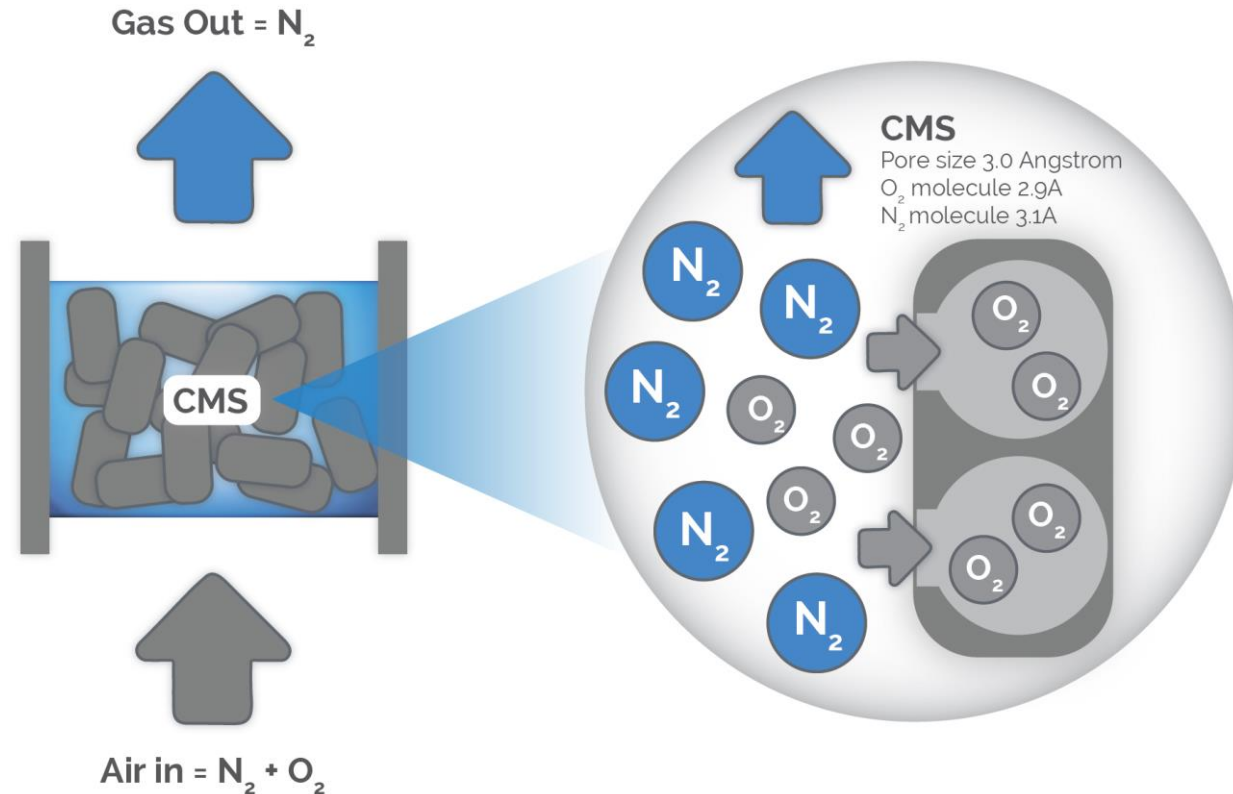
1 - 20 μm



Pore structure
(0.4 nm - 25 nm)

 N_2 molecule

 O_2 molecule



(real life example)

PSA – N₂GEN[®] Series

	N ₂ GEN TS	N ₂ GEN CS	N ₂ GEN S
Series	Tank-mounted skid	Compact skid	Full skid
N ₂ -Purity %	95% - 99.999%	95% - 99.999%	95% - 99.999%
Flow Rate (SCFH)	1 – 250	250 – 2,375	460 – 45,000*
N ₂ Pressure Out	115 PSI**	115 PSI**	115 PSI**
Storage Tank	60/80 Gallons	Varies	Varies
Standard Warranty	1 Year	1 Year	1 Year
Extended Warranty	Up to 5 years	Up to 5 years	Up to 5 years

*Higher flow rates achieved with multiple nitrogen generators are piped together

**Higher pressures achieved with high pressure booster after nitrogen tank




The STS Advantage: Standard Features

- ✓ Every System is pre-tuned, calibrated, tested, and comes with a Purity & Performance Certification
- ✓ EverPure™ Technology ensures nitrogen purity consistency
- ✓ Custom In-House Engineering
- ✓ Easy to service/change-out parts
- ✓ Ultra-high quality (AAA) grade CMS – life expectancy of 20+ years
- ✓ Interactive PLC Touchscreen
- ✓ UL 508A Approved Electronics
- ✓ Standard 2-Year Warranty with your purchase
- ✓ Air and Nitrogen Low Pressure Alarm
- ✓ Purity Monitoring (Oxygen Analyzer)
- ✓ Advanced Filtration Package
- ✓ Ethernet Connection



We ARE Nitrogen!®



Purity Certification

N₂GEN® 260S-3P5

Serial Number: 63XXX001

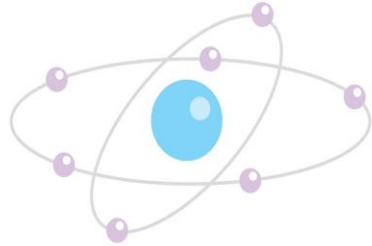
Production / DAS Date: 00/00/2019

Nitrogen Purity Level: 99.5% O₂

Nitrogen Flow Rate: 2400 SCFH

DAS Technician (signature/date)

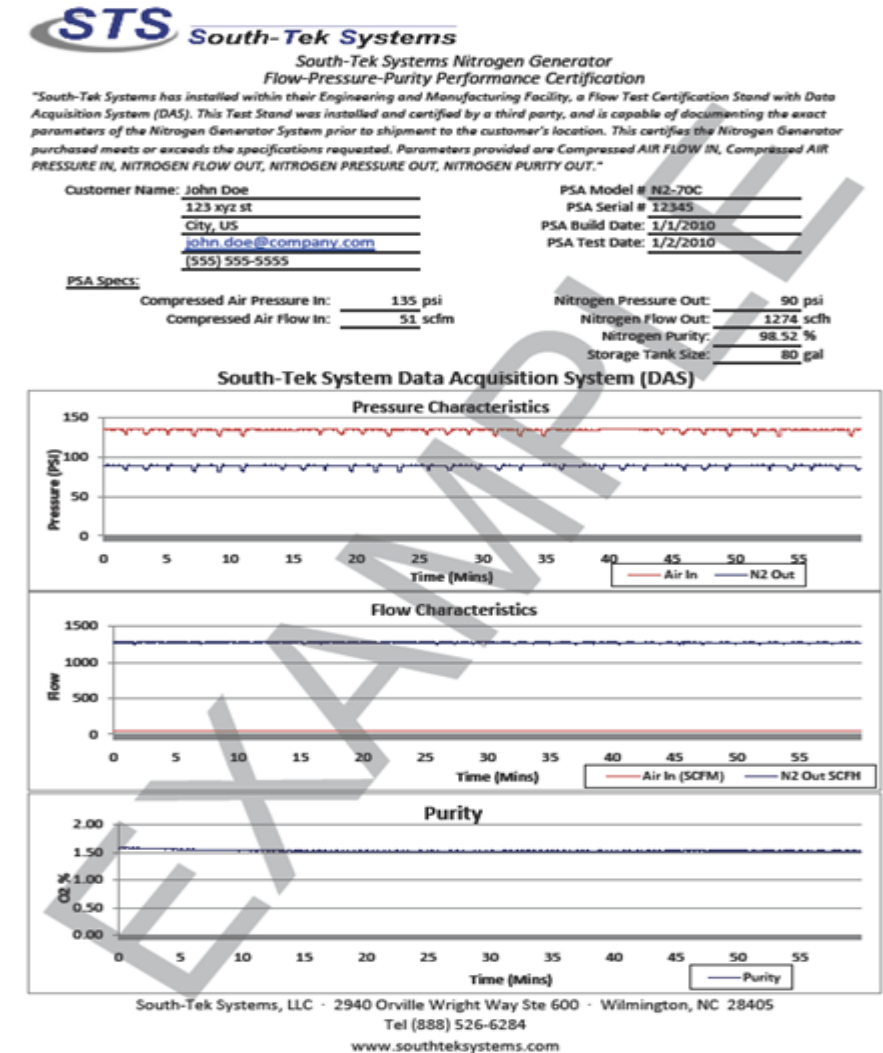
DAS - Supervisor (signature/date)

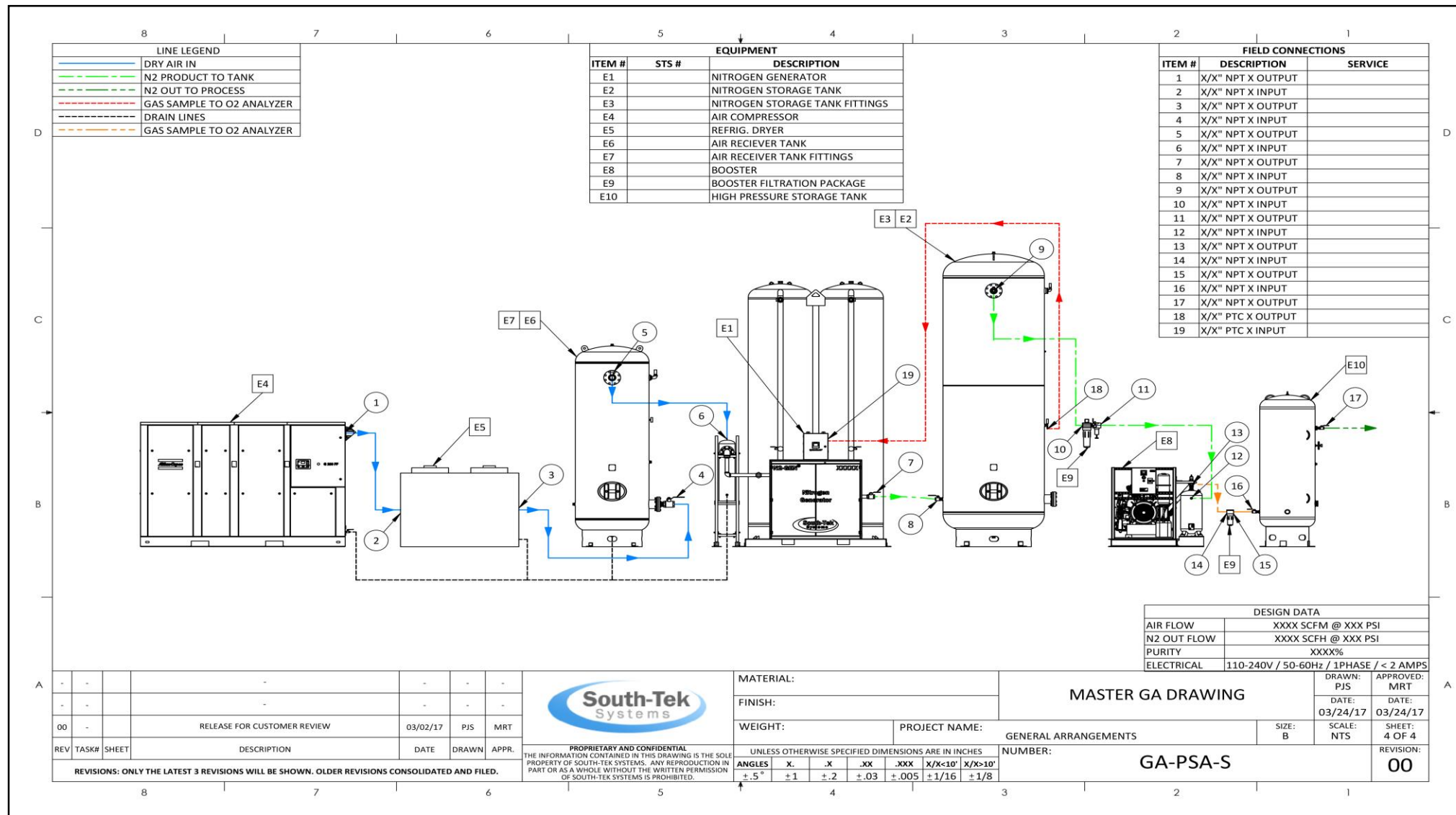


SEAL



2940 Orville Wright Way, Wilmington, North Carolina 28405 • 888 526 6284 • www.southteksystems.com





- The annual maintenance/consumables is the filter changes. There are 7 total filters per year:



- Particulate Filter is changed quarterly
 - Coalescing Filter is changed twice per year
 - Absorber Filter is changed annually

The STS Advantage: Optional Features

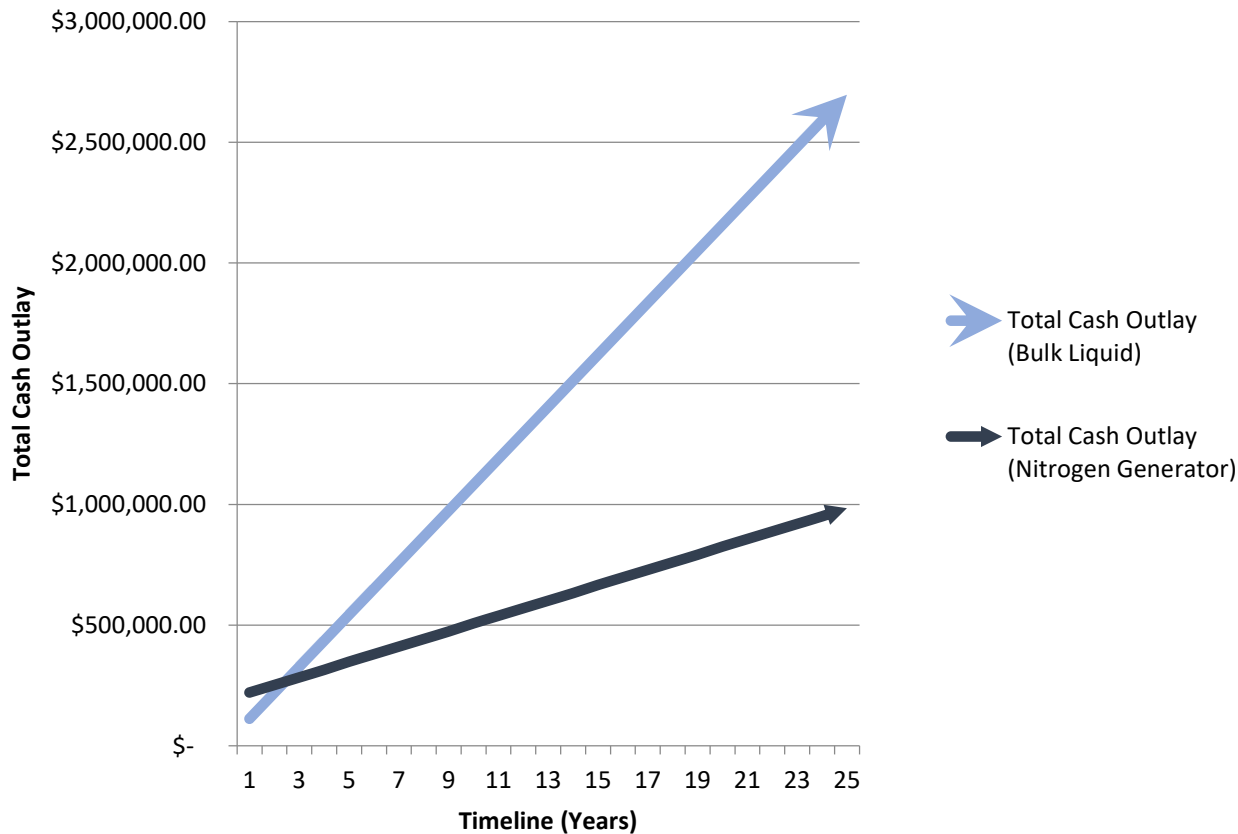
- ✓ PurityLock™
- ✓ PurityProtect™
- ✓ Outdoor Installation Packages
- ✓ Noise abatement Upgrade
- ✓ Premium connection package
- ✓ Various Remote monitoring Options
- ✓ SMART-Trak™ Technology
- ✓ Remote Monitoring Option
 - RS 232, Mod Bus, 4-20, 0-10, etc.
- ✓ Duplex Nitrogen Generator Option
- ✓ Upgradable Electronics Packages
- ✓ Supply Air Pressure Transducer
- ✓ Inlet Air Temperature Sensor
- ✓ Pressure Dew Point Monitor
- ✓ Two-Way or Three-Way Purity Exchange
- ✓ Extended Warranties up to 5 Years





The Nitrogen Generator Advantage - Purchase

The Cost Savings in Generating Your Own Nitrogen



Nitrogen Generator Costs Include:

- The purchase of all necessary equipment (Air Compressor & Nitrogen Generator)
- All electrical consumption/costs
- All maintenance on the equipment
- 25 year system life expectancy

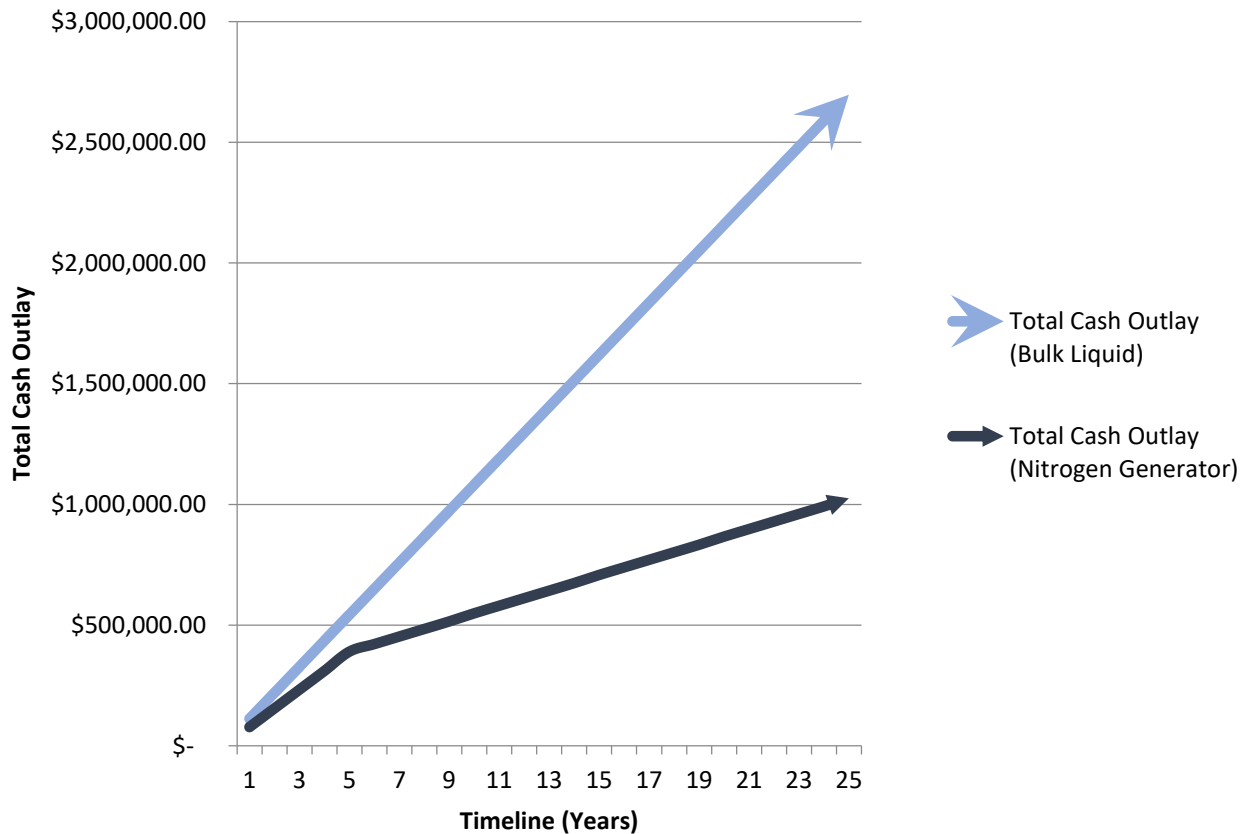
Considering a 4,000 SCFH system operating (18) hours per day, 260 days per year:

- ✓ **24 month Return on Investment!!**
- ✓ **\$1.7 Million in Cost Savings!!**



The Nitrogen Generator Advantage – Lease-to-Own

The Cost Savings in Generating Your Own Nitrogen



Nitrogen Generator Costs Include:

- (5) Year lease-to-Own on all necessary equipment (Air Compressor & Nitrogen Generator)
- All electrical consumption/costs
- All maintenance on the equipment
- 25 year system life expectancy

Considering a 4,000 SCFH system operating (18) hours per day, 260 days per year:

- ✓ **IMMEDIATE Return on Investment!!**
- ✓ **\$1.7 Million in Cost Savings!!**



South-Tek Systems Installations



Laser Cutting
6,000 SCFH , 99.99% N2
@ 450+ PSI





South-Tek Systems Installations

Electronics Wave Soldering

2x 4,800 SCFH, 99.998% N₂
@ 130+ PSI





South-Tek Systems Installations

Heat Treating
10639 SCFH, 99.9% N₂
@ 60+ PSI





Contact Us:

We ARE Nitrogen.
southteksystems.com

3700 US Hwy 421 North
Wilmington, NC 28401
info@southteksystems.com
(910) 332-4173 or (888) 526-6284

THANK YOU FOR YOUR TIME