

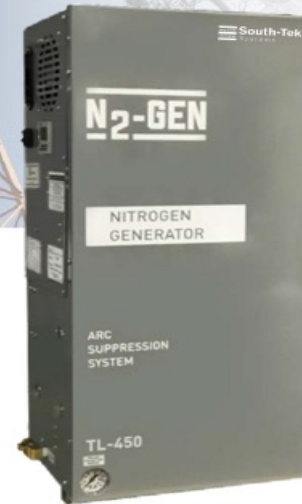
MISSION
CRITICAL

South-Tek
Systems



N₂-GEN[®]

Arc Suppression System



Intro.... a little about South-Tek



Draught Beer

Ex. "BeerBlast™"
Systems are installed
in 900+ BWW
locations & 4K+
restaurants



Laser Cutting

Ex. Blanketing laser
beams w/ N₂ increases
sheet metal cutting
production by 60%



Food Packaging

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



Military

Ex. Hundreds of Portable
EOMSC Shelters – Optics
Purging



Heat Treating

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



Fire Protection

Corrosion Solutions for Dry,
Pre-action & Wet Fire
Sprinkler Systems

Types of Facilities



Data Centers



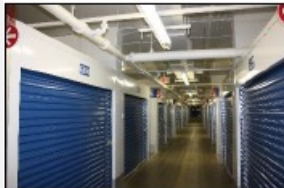
Cold Storage



Retail



Parking Garages



**Climate Control
Storage**



Long Term Care



Hotels



Stadiums



Hospitals



Universities



Museums



Military Bases



Intro.... a little about myself

- Market Segment Leader – Commercial
- 10+ years in FPS distribution
- Pittsburgh, Pa – Home Office
- 2005 Penn State Grad
- 2 Daughters – Lilly (3yr.) & Amira (10 Mo.)
- Love golf..... just doesn't love me back



Bkaplon@Southteksystems.com

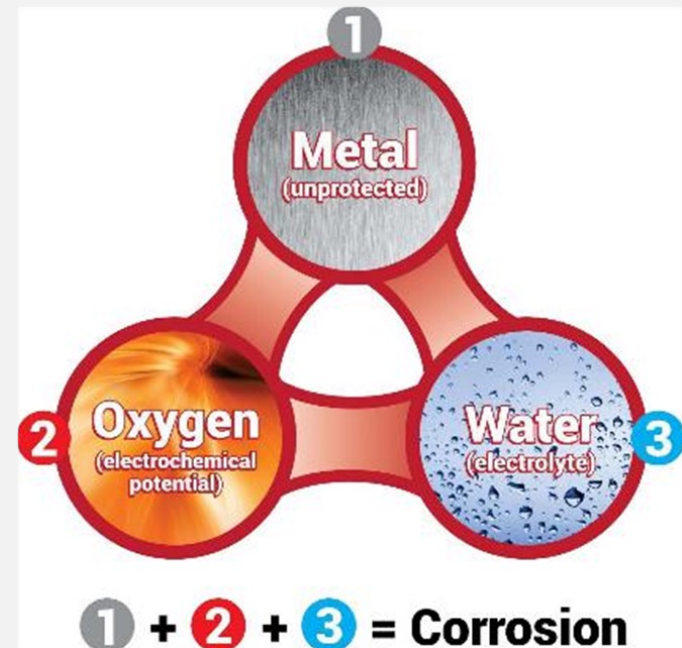
C: 724-664-7587



Why Nitrogen???????

Transmission lines can be vulnerable to corrosion if they are exposed to oxygen and moisture – the two main components that cause a corrosive reaction.

Not only can corrosion become a problem in transmission lines, but dangerous voltage arcs and copper oxidation can also become issues if protective measures are not taken.



Why Nitrogen???????

Schedule 10 Black

Schedule 10 Galvanized

As Received	Cleaned	
		Compressed Air Supervision 20.7 Years Service Life
		95% Nitrogen Supervision 25.2 Years Service Life
		98% Nitrogen Supervision 63.2 Years Service Life

As Received	Cleaned	
		Compressed Air Supervision 9.9 Years Service Life
		95% Nitrogen Supervision 12.6 Years Service Life
		98% Nitrogen Supervision 176 Years Service Life

How the N2-GEN TL Series – Arc Suppression System works:

In addition to creating its own supply of nitrogen gas to be used on demand, the Arc Suppression System ensures the dew point within the transmission line is lower than the temperature of the line itself. This safely and effectively displaces the oxygen and moisture that may be present in the line. This greatly reduces the chance of a voltage arc while also inhibiting corrosion and high-temperature oxidation of copper.

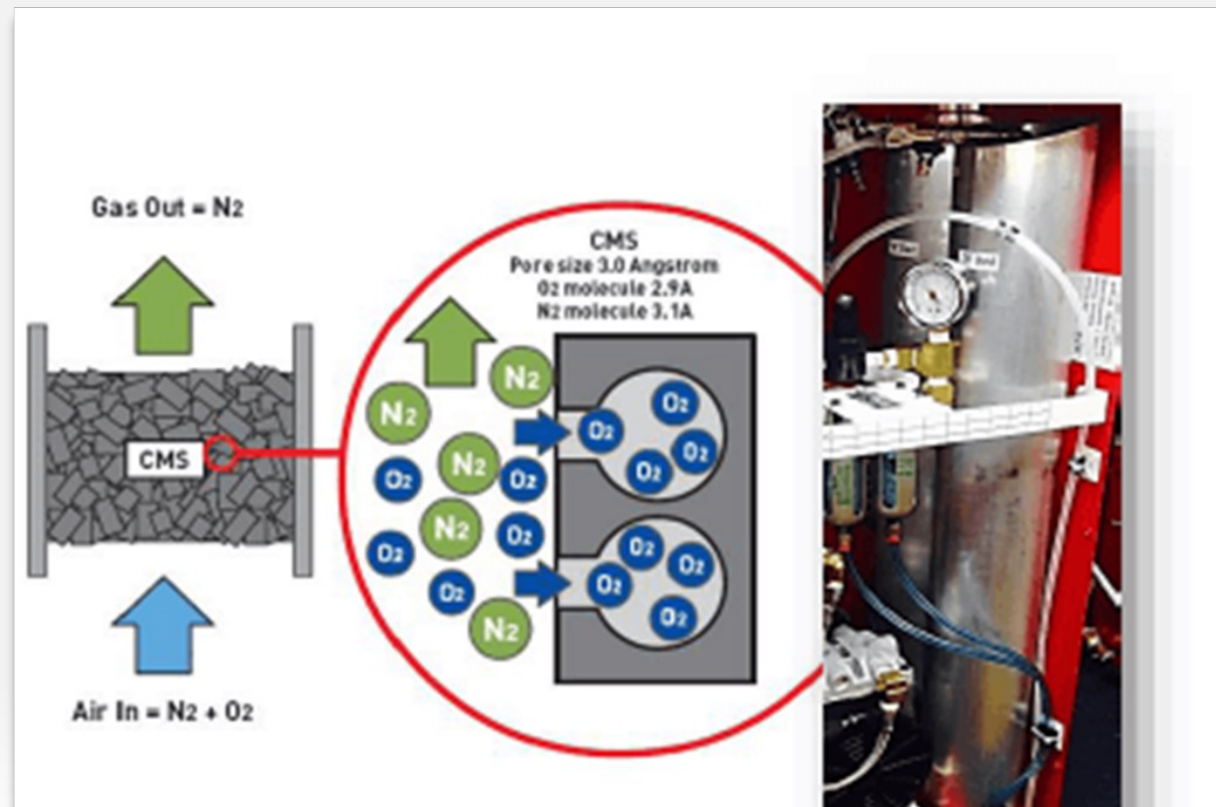
Separation Methods - Membrane



- 3:1 Air to Nitrogen Ratio
- Polymeric hollow fiber
- Life Expectancy: 8-13 years

Separation Methods – PSA (Pressure Swing Adsorption)

- Dual Sieve Beds contain Carbon Molecular Sieve (CMS)
- 2:1 Air to Nitrogen Ratio
- Life Expectancy: 20-25 years
- Holds purity longer



Questions?

Our models

N₂-GEN® - TL-450

- | UL 508A listed, wall-mount unit
- | Pressure Swing Adsorption (PSA) technology
- | Preventative maintenance reminder
- | Provided with integral Air Compressor
- | Includes 28 gal. N₂ receiver tank (14" dia. x 47" H)

Specifications

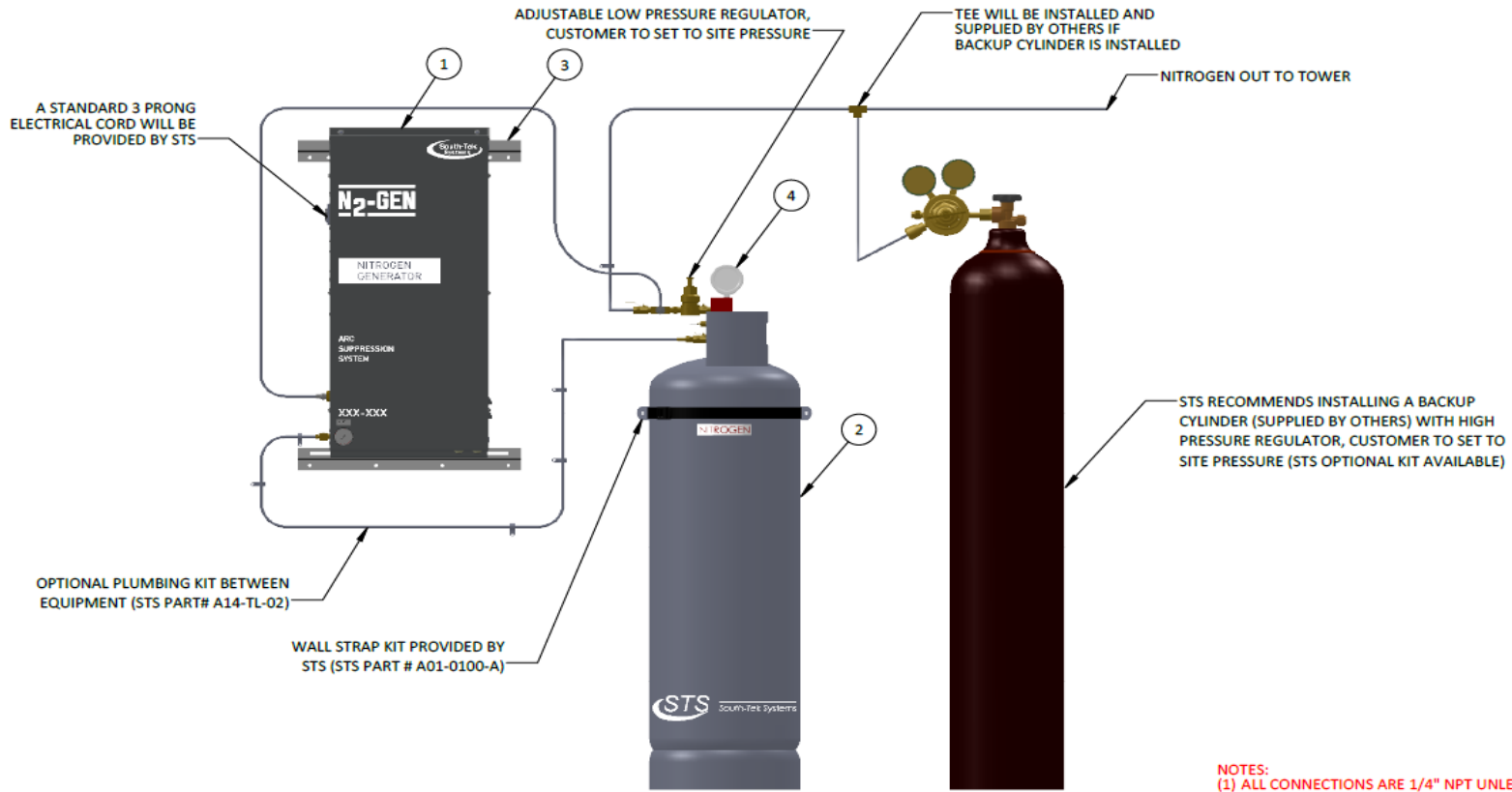
- | Minimum nitrogen purity 98%
- | Minimum flow rate 450 SCFD
- | Dew point -10° to -50° F
- | Electrical 110 VAC, 15 AMPS
- | Dimensions 28.5" H x 12.8" W x 10.2" D

TL-450

**Backup cylinder
not included*



ITEM #	STS PART #	DESCRIPTION	OPTIONAL / STANDARD
1	TL-00450	NITROGEN GENERATOR	STANDARD
2	A01-TL-02	60# TANK ASSEMBLY	STANDARD
3	A05-TYP1-GR	100/200 AND MPSA MOUNTING BRACKETS INSTALLATION	OPTIONAL
4	005-039-LPA	TANK MANIFOLD ASSEMBLY FOR LOW PRESSURE ALARM	STANDARD



NOTES:
 (1) ALL CONNECTIONS ARE 1/4" NPT UNLESS OTHERWISE SPECIFIED.
 (2) SEE DRAWING DD-TYP1P-TL-00450 FOR THE NITROGEN GENERATORS DESIGN DATA.
 (3) SEE DRAWING A05-TYP1-TI FOR MOUNTING BRACKET INSTALLATION GUIDE.

REV	TASK#	SHEET	DESCRIPTION	DATE	DRAWN	APPR.
03	10339	-	ADDED STANDARD LOW PRESSURE ALARM ASSEMBLY	05/10/18	SRG	MRT
02	-	-	GENERAL DRAWING UPDATE	05/04/2016	PJS	JVN
01	-	-	MODIFID OVERALL STANDARD	02/12/2016	PJS	JVN

South-Tek Systems

PROPRIETARY AND CONFIDENTIAL
 THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF SOUTH-TEK SYSTEMS. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF SOUTH-TEK SYSTEMS IS PROHIBITED.

MATERIAL:
 FINISH:
 WEIGHT: PROJECT NAME:

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

ANGLES	.X	.X	.XX	.XXX	X/X-10°	X/X-10°
±.5°	±1	±.2	±.03	±.005	±1/16	±1/8

TL-00450 GENERAL ARRANGEMENT		DRAWN: PJS	APPROVED: MRT
		DATE: 02/12/16	DATE: 05/16/18
COMMERCIAL GENERAL ASSEMBLY DRAWINGS		SIZE: B	SCALE: 1:10
NUMBER: GA-TYP1P-TL-00450		REVISION: 03	

REVISIONS: ONLY THE LATEST 3 REVISIONS WILL BE SHOWN. OLDER REVISIONS CONSOLIDATED AND FILED.

Our models

N₂-GEN® - TL-1050

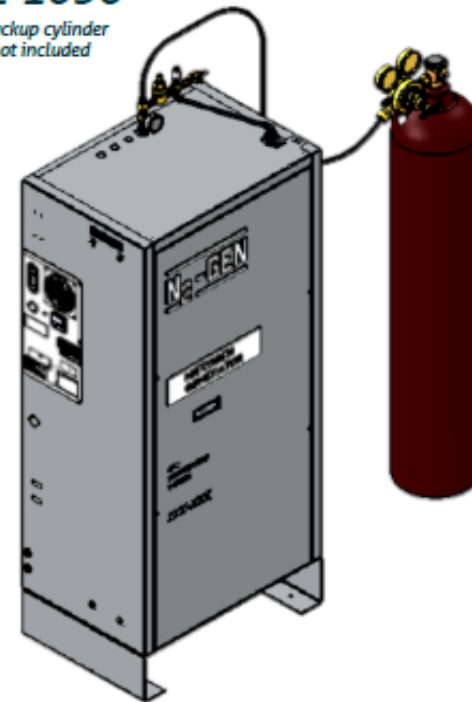
- | UL 508A listed, cabinet enclosed unit
- | Pressure Swing Adsorption (PSA) technology
- | Preventative maintenance reminder
- | Provided with integral Air Compressor
- | Integrated 15.5 gal. N₂ receiver tank

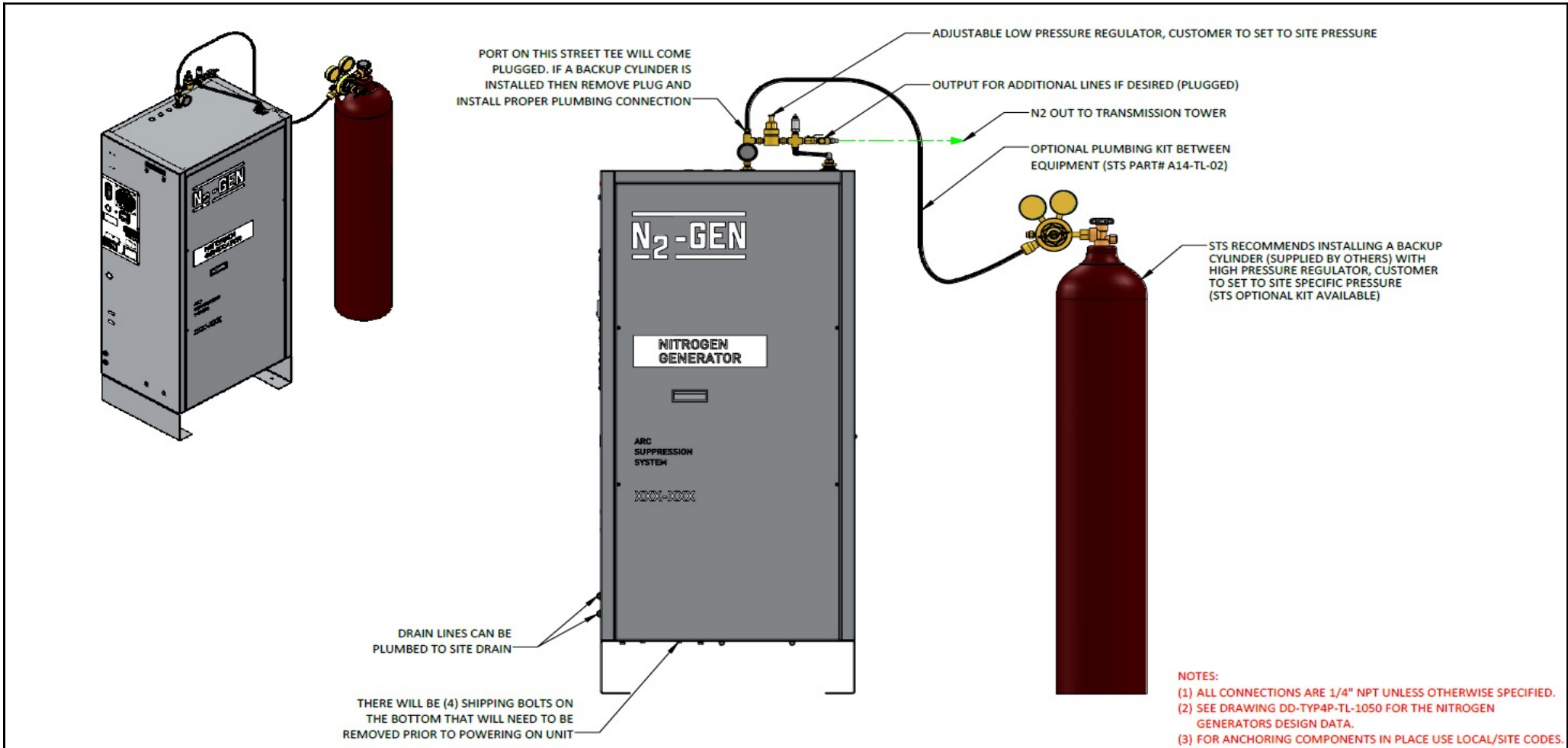
Specifications

- | | |
|-------------------------|-----------------------|
| Minimum nitrogen purity | 98% |
| Minimum flow rate | 1,050 SCFD |
| Dew point | -10° to -50° F |
| Electrical | 110 VAC, 15 AMPS |
| Dimensions | 58" H x 26" W x 18" D |


TL-1050

**Backup cylinder
not included*





- NOTES:**
- (1) ALL CONNECTIONS ARE 1/4" NPT UNLESS OTHERWISE SPECIFIED.
 - (2) SEE DRAWING DD-TYP4P-TL-1050 FOR THE NITROGEN GENERATORS DESIGN DATA.
 - (3) FOR ANCHORING COMPONENTS IN PLACE USE LOCAL/SITE CODES.

03	10339	-	ADDED LOW PRESSURE ALARM AND REGULATOR	04/30/18	SRG	MRT		MATERIAL:	TL-1050 GENERAL ARRANGEMENT	DRAWN:	APPROVED:														
02	-	-	GENERAL DRAWING UPDATE	05/04/2016	PJS	JVN		FINISH:		DATE:	DATE:														
01	-	-	MODIFIED OVERAL STANDARD	02/12/2016	PJS	JVN		WEIGHT:		02/17/16	05/16/18														
REV	TASK#	SHEET	DESCRIPTION	DATE	DRAWN	APPR.	<small>PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF SOUTH-TEK SYSTEMS. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF SOUTH-TEK SYSTEMS IS PROHIBITED.</small>	PROJECT NAME:	COMMERCIAL GENERAL ASSEMBLY DRAWINGS	SIZE:	SHEET:														
REVISIONS: ONLY THE LATEST 3 REVISIONS WILL BE SHOWN. OLDER REVISIONS CONSOLIDATED AND FILED.							<small>UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES</small>	NUMBER:	GA-TYP4P-TL-1050	SCALE:	REVISION:														
							<table border="1"> <tr> <th>ANGLES</th> <th>X.</th> <th>.X</th> <th>.XX</th> <th>.XXX</th> <th>X/X<10'</th> <th>X/X>10'</th> </tr> <tr> <td>+ 5°</td> <td>+1</td> <td>+ 2</td> <td>+ .03</td> <td>+ .005</td> <td>+ 1/16</td> <td>+ 1/8</td> </tr> </table>	ANGLES	X.	.X	.XX	.XXX	X/X<10'	X/X>10'	+ 5°	+1	+ 2	+ .03	+ .005	+ 1/16	+ 1/8			1:10	1 OF 1
ANGLES	X.	.X	.XX	.XXX	X/X<10'	X/X>10'																			
+ 5°	+1	+ 2	+ .03	+ .005	+ 1/16	+ 1/8																			
												03													

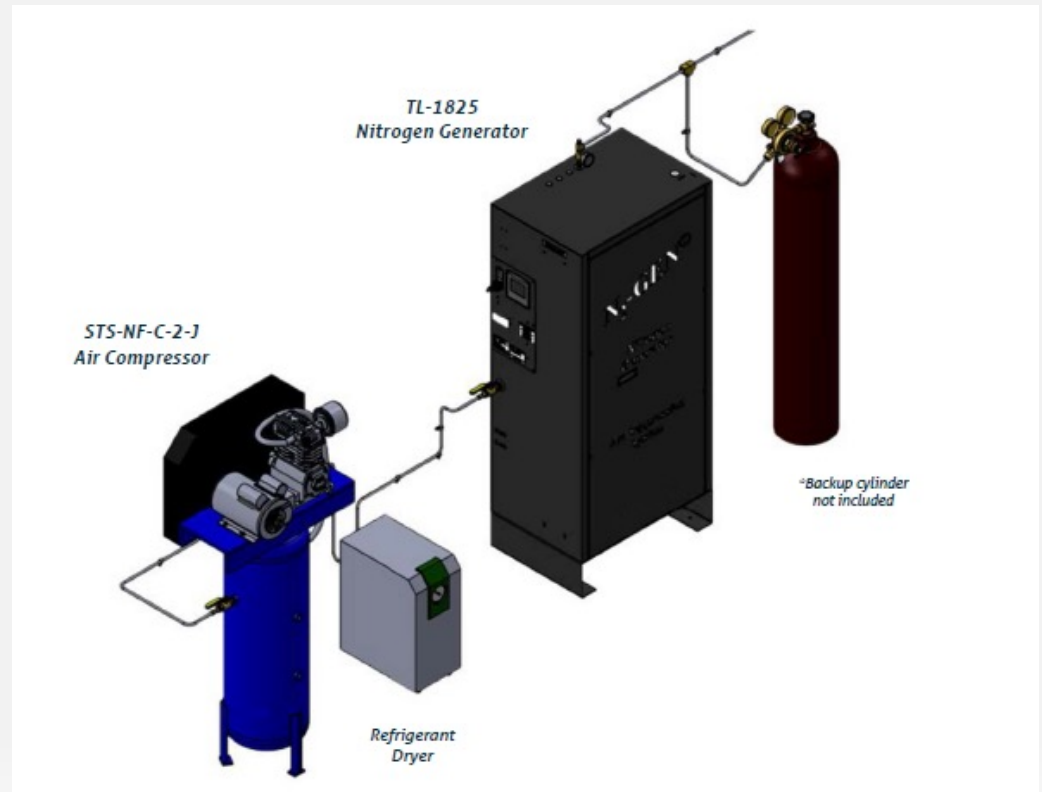
Our models

N₂-GEN[®] - TL-1825

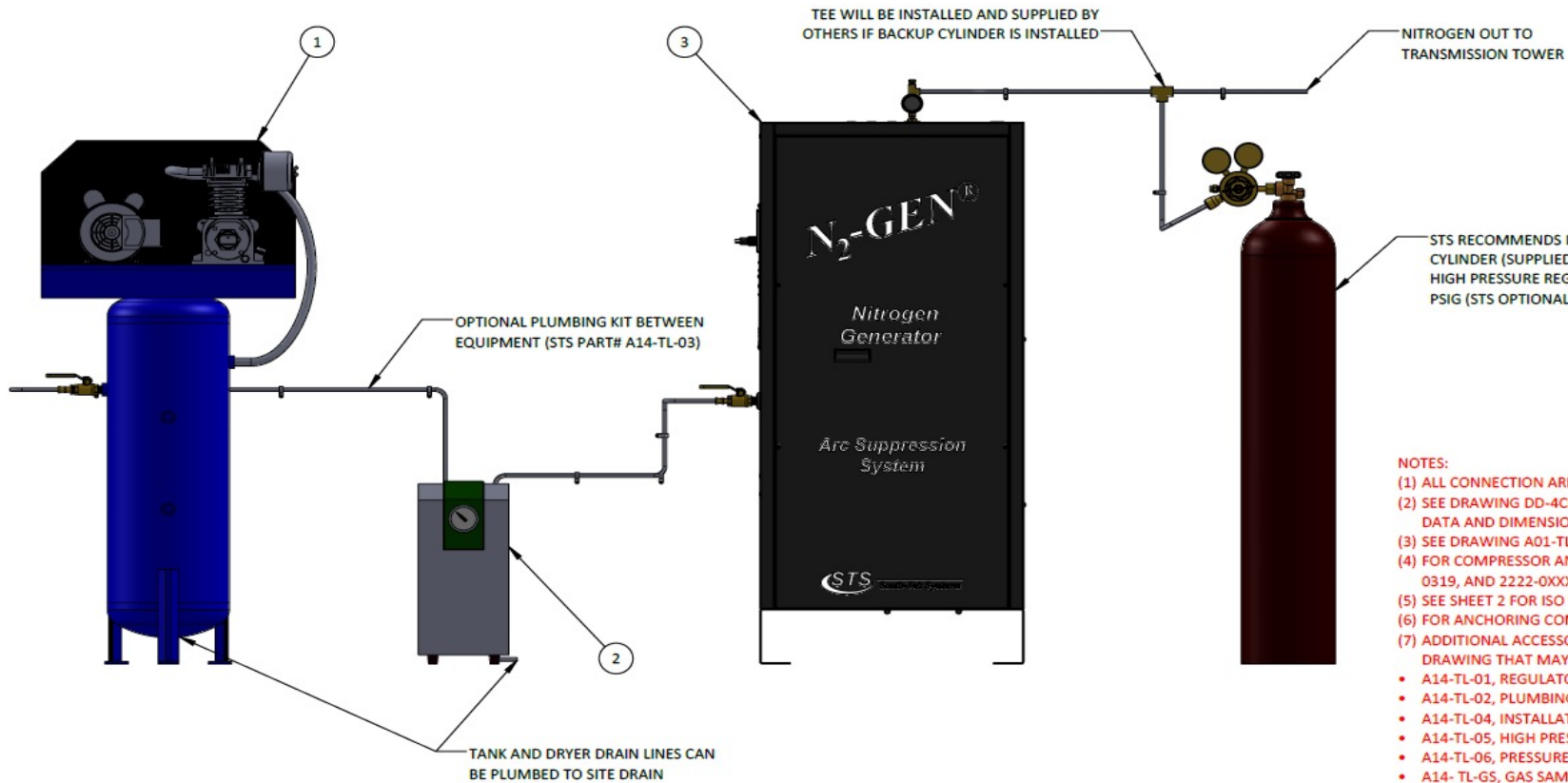
- | UL 508A listed, cabinet enclosed unit
- | Pressure Swing Adsorption (PSA) technology
- | Preventative maintenance reminder
- | Requires STS-NF-C-2-J Air Compressor Package
- | Integrated 15.5 gal. N₂ receiver tank

Specifications

- | Minimum nitrogen purity 98%
- | Minimum flow rate (SCFD) 1,825
- | Dew point -10° to -50° F
- | Dimensions 58" H x 26" W x 18" D
- | N₂ generator electrical 110 VAC, 15 AMPS



ITEM #	STS PART #	DESCRIPTION
1	2222-0XXX-A	STS-NF-C-3-J COMPRESSOR
2	2222-0319	RD-10 AIR DRYER
3	TL-1725	TYP4P TL NITROGEN GENERATOR



- NOTES:**
- (1) ALL CONNECTION ARE 1/4" NPT UNLESS OTHERWISE SPECIFIED.
 - (2) SEE DRAWING DD-4CPX-P FOR THE NITROGEN GENERATORS DESIGN DATA AND DIMENSIONS.
 - (3) SEE DRAWING A01-TL-02 FOR THE 60# TANK ASSEMBLY DESIGN DATA.
 - (4) FOR COMPRESSOR AND DRYER DESIGN DATA SEE DRAWINGS 2222-0319, AND 2222-0XXX-A.
 - (5) SEE SHEET 2 FOR ISO VIEW.
 - (6) FOR ANCHORING COMPONENTS IN PLACE USE LOCAL/SITE CODES.
 - (7) ADDITIONAL ACCESSORY OPTIONS NOT SHOWN WITHIN THIS DRAWING THAT MAY BE PURCHASED FROM STS ARE AS FOLLOWS:
 - A14-TL-01, REGULATOR KIT
 - A14-TL-02, PLUMBING INSTALLATION KIT
 - A14-TL-04, INSTALLATION KIT FOR ADDITIONAL TRANSMISSION LINES
 - A14-TL-05, HIGH PRESSURE K CYLINDER REGULATOR KIT
 - A14-TL-06, PRESSURE GAUGE FOR ADDITIONAL TRANSMISSION LINES
 - A14-TL-05, GAS SAMPLE INSTALLATION KIT

REV	TASK#	SHEET	DESCRIPTION	DATE	DRAWN	APPR.
-	-	-	-	-	-	-
00	10204		RELEASE FOR USE IN DRAWING PACKAGES (REPLACES GA-TYP3P-TL)	05/12/17	PJS	MRT

South-Tek Systems

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF SOUTH-TEK SYSTEMS. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF SOUTH-TEK SYSTEMS IS PROHIBITED.

MATERIAL:
FINISH:
WEIGHT:

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

ANGLES	X.	.X	.XX	.XXX	X/X<10'	X/X>10'
+5°	+1	+2	+03	+005	+1/16	+1/8

TYP4P TL GENERAL ARRANGEMENT DRAWING

TRANSMISSION LINE

NUMBER: GA-TYP4P-TL-1725

DRAWN: PJS	APPROVED: MRT
DATE: 05/12/17	DATE: 05/12/17
SCALE: 1:12	SHEET: 1 OF 2
REVISION:	00

REVISIONS: ONLY THE LATEST 3 REVISIONS WILL BE SHOWN. OLDER REVISIONS CONSOLIDATED AND FILED.

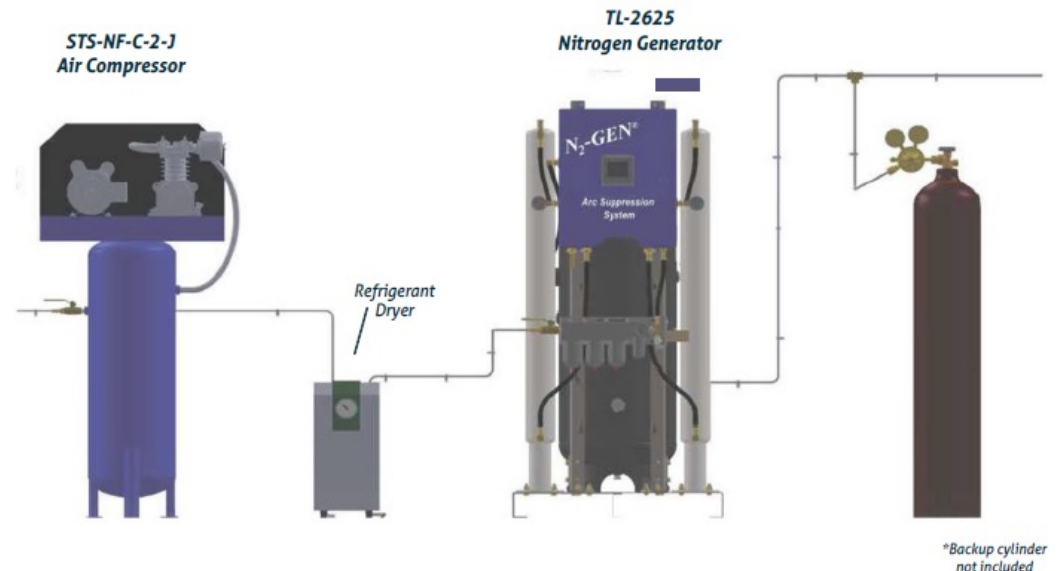
Our models

N₂-GEN® - TL-2625

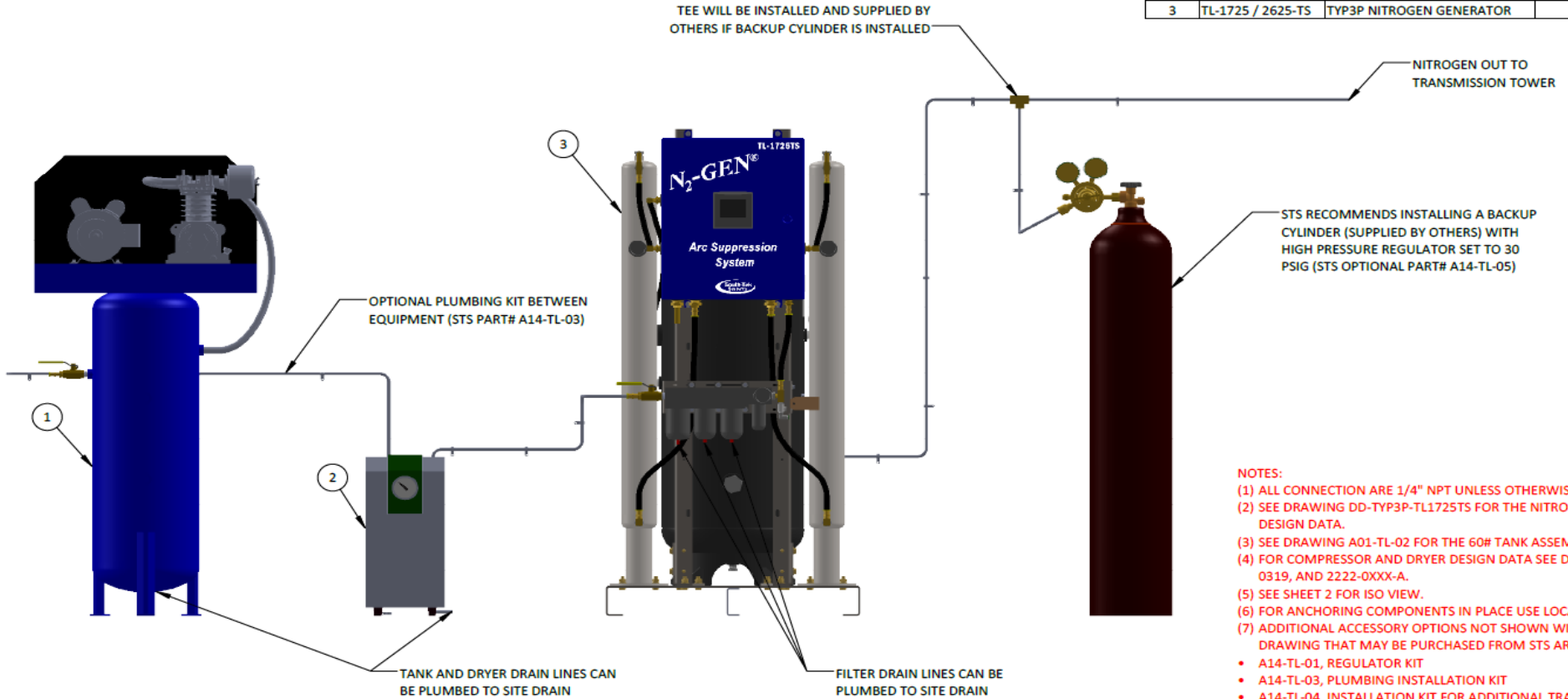
- | UL 508A listed, skid-mount unit
- | Pressure Swing Adsorption (PSA) technology
- | Preventative maintenance reminder
- | Requires STS-NF-C-2-J Air Compressor Package
- | Includes 30 gal. N₂ receiver tank (skid mount)

Specifications

Minimum nitrogen purity	98%
Minimum flow rate (SCFD)	2,625
Dew point	-10° to -50° F
Skid weight	315 lbs.
Skid dimensions	66" H x 29" W x 33" D
N ₂ generator electrical	110 VAC, 8 AMPS



ITEM #	STS PART #	DESCRIPTION	OPTIONAL / STANDARD
1	2222-0XXX-A	STS-NF-C-3-J COMPRESSOR	OPTIONAL
2	2222-0319	RD-10 AIR DRYER	OPTIONAL
3	TL-1725 / 2625-TS	TYP3P NITROGEN GENERATOR	STANDARD



- NOTES:
- (1) ALL CONNECTION ARE 1/4" NPT UNLESS OTHERWISE SPECIFIED.
 - (2) SEE DRAWING DD-TYP3P-TL1725TS FOR THE NITROGEN GENERATORS DESIGN DATA.
 - (3) SEE DRAWING A01-TL-02 FOR THE 60# TANK ASSEMBLY DESIGN DATA.
 - (4) FOR COMPRESSOR AND DRYER DESIGN DATA SEE DRAWINGS 2222-0319, AND 2222-0XXX-A.
 - (5) SEE SHEET 2 FOR ISO VIEW.
 - (6) FOR ANCHORING COMPONENTS IN PLACE USE LOCAL/SITE CODES.
 - (7) ADDITIONAL ACCESSORY OPTIONS NOT SHOWN WITHIN THIS DRAWING THAT MAY BE PURCHASED FROM STS ARE AS FOLLOWS;
 - A14-TL-01, REGULATOR KIT
 - A14-TL-03, PLUMBING INSTALLATION KIT
 - A14-TL-04, INSTALLATION KIT FOR ADDITIONAL TRANSMISSION LINES
 - A14-TL-05, HIGH PRESSURE K CYLINDER REGULATOR KIT
 - A14-TL-06, PRESSURE GAUGE FOR ADDITIONAL TRANSMISSION LINES
 - A14-TL-05, GAS SAMPLE INSTALLATION KIT

-	-	-	-	-	-
-	-	-	-	-	-
00	-	-	INITIAL DRAWING RELEASE	07/25/2016	PJS JVN
REV	ECR#	SHEET	DESCRIPTION	DATE	DRAWN APPR.
REVISIONS: ONLY THE LATEST 3 REVISIONS WILL BE SHOWN. OLDER REVISIONS CONSOLIDATED AND FILED.					

South-Tek Systems

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF SOUTH-TEK SYSTEMS. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF SOUTH-TEK SYSTEMS IS PROHIBITED.

MATERIAL:
FINISH:
WEIGHT:

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
WHOLE NUMBER DIM'S: ± .1
ONE DEC.: ± .2, TWO DEC.: ± .02
THREE DEC.: ± .005, ANG.: ± .05°

TYP3P TL GENERAL ARRANGEMENT DRAWING		DRAWN: PJS	APPROVED: MRT
		DATE: 07/25/16	DATE: 07/26/16
PROJECT NAME: TRANSMISSION LINE	SIZE: B	SCALE: 1:12	SHEET: 1 OF 2
NUMBER: GA-TYP3P-TL			REVISION: 00

Compressor Requirements

STS-NF-C-2-J Air Compressor Package

- | 2 hp piston, oil lubricated w/ after-cooler
- | 17 gal. tank w/ pneumatic auto-drain
- | Added filtration to ensure dry, oil-free air
- | Complete with refrigerant dryer

Specifications

- | | |
|-------------------------|----------------------------------|
| Air flow output | 7.6 SCFM @ 125 PSI |
| Air compressor dim. | 57"H x 27"W x 16"D |
| Refrigerant dryer dim. | 15"H x 9"W x 16"D |
| Refrigerant dryer elec. | 115 VAC, 10 AMPS |
| Air compressor elec. | 1Ph 120/230V
3Ph 208/230/460V |

How to size??

Transmission Line Specs	
Transmission Line Height (feet)	
Line Diameter (inches)	
Cubic Feet at Atmosphere	0.00
Pressure (PSI)	5.00
Cubic Feet Required to Fill System to Pressure	0.00
Runtime per Day (hours)*	
TL-450	0.000
TL-1050	0.000
TL-1825	0.000
TL-2625	0.000
<i>*Assuming 10% leak rate over 24 hours</i>	

Directions

Step 1: Input the transmission line height, diameter and maintenance pressure in the yellow highlighted cells.

Step 2: The optimal runtime for the nitrogen generator is (6) hours or less per day. Choose the appropriate model based on the runtime per day output displayed in the blue highlighted cells.

Alarms

- Leak Detection Alarm – detects line leaks from generator to line
- Power Failure Alarm
- Low Pressure Alarm – set to your specifications / adjustable
- Purity Alarm – If generator purity drops below 98%
- Filter Replacement – 1000 of run time or 365 days

Common Alarm Dry Contact to BMS

Maintenance

Quarterly

- Air Compressor
 - Check belt
 - Wipe down surfaces
 - Inspect oil level
- Nitrogen Generator and Accessories
 - Check that 98% purity is maintained within each line
 - Monitor runtime (should be >6 hours per day)

Annually

- Air Compressor
 - Change lubricant and air filter
- Nitrogen Generator and Accessories
 - Change all filters
 - Rinse the inside of each filler bowl
 - Check that 98% purity is maintained within each line
 - Monitor runtime

Questions?