

LABTEK™

TYP2M Series

Operation, Installation and
Maintenance Manual

Version 0
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The Leader in Nitrogen Generation Technology

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I. Introduction

The LABTEK TYP2M NITROGEN GENERATOR is a compact Nitrogen Generator that uses compressed air to create from 95% to over 99% pure Nitrogen. This system was designed to operate without electrical requirements and has no user adjustments for easy, trouble free operation. The system requires 135-175 psig from the compressor and will store the produced N₂ in its storage tank at 135, 120, or 100psig (dependent on air input). *****Special Setups Available*****. When the LABTEK TYP2M NITROGEN GENERATOR is in operation; it will automatically draw from the supply line and constantly fill the storage tank until it has reached its max storage setting. Once the storage tank has filled to this point, a Pressure Switch will shut off the supply line so that your compressor is not used in excess. This will also reduce the wear on the system's nitrogen generating media. When you are using N₂, the system will automatically start generating N₂ once the tank pressure drops 10- 15psi from set point.

Warnings

***** Read before installing and operating the LABTEK TYP2M Nitrogen Generator*****

The LABTEK TYP2M NITROGEN GENERATOR produces Nitrogen (N₂) at a low flow rate, which quickly dissipates into the air. N₂ gas is not poisonous but should not be directly inhaled, since in high concentrations, it can cause asphyxiation. **Ensure that the unit is installed within a well-ventilated room, one that is not sealed off from normal living space air changes. Also, keep away from organic solvents and other vapors.**

All personnel involved with installation, operations, and maintenance of the LABTEK TYP2M NITROGEN GENERATOR must follow safe working practices, OSHA, and local health/safety code regulations during the installation, operation, and maintenance of the unit.

Always depressurize the LABTEK TYP2M NITROGEN GENERATOR completely before moving, transporting, or servicing since it is under pressure.

II. Models and Specifications

The LABTEK TYP2M NITROGEN GENERATOR series includes two variants that offer different options for volumetric flowrate. The specifications below detail the performance of the two models as set by the factory. Custom settings that alters the nitrogen flowrate and the purity are available.

| Model Name | N2-LAB-100L | N2-LAB-220L |
|---------------------------|--------------------------------|--------------------------------|
| Generator air requirement | 616 scfh @ 125 psig | 1232 scfh @ 125 psig |
| Nitrogen Flowrate | 234 scfh @ 105 psig | 468 scfh @ 105 psig |
| Nitrogen Purity | 95 % | 95 % |
| Cabinet Size | 14.2" L x 11.8" W x 42.4" H | 14.2" L x 11.8" W x 42.4" H |

III. Unpacking and Preparations

The LABTEK TYP2M NITROGEN GENERATOR's carton should be carefully opened and all parts should be inspected for damage, upon receipt. Identify and verify that all parts listed on the packing list are present and undamaged. *South-Tek Systems (STS) is not responsible for damages that have occurred during the shipping and handling of the LABTEK TYP2M NITROGEN GENERATOR.* Any visual damages should be immediately documented and reported to the shipping company responsible. Then contact South-Tek Systems at (910) 332- 4173 to assess the damages only after the shipping company has been notified.

Until Installation:

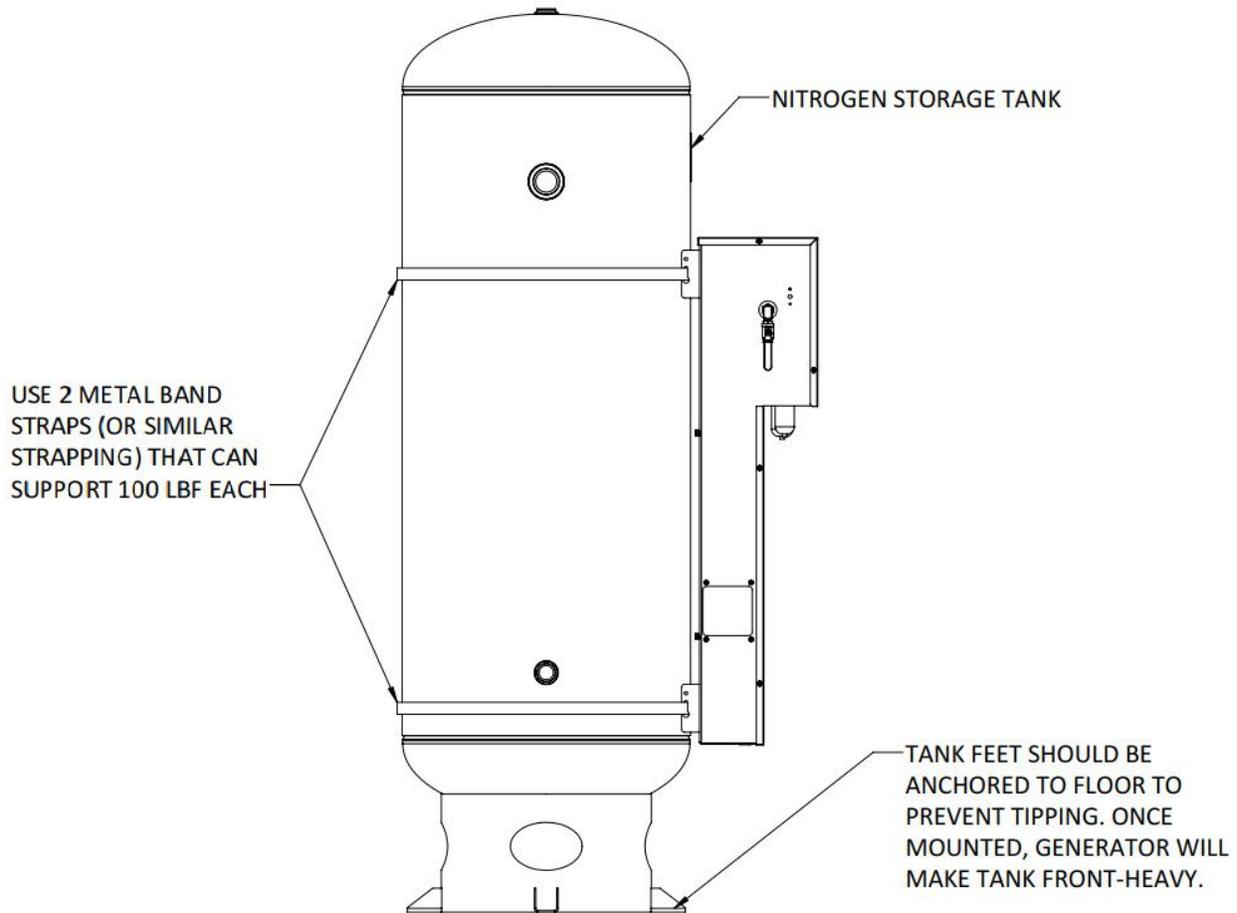
- Store the LABTEK TYP2M NITROGEN GENERATOR in a dry and climate controlled (50-80°F) room.
- Always keep the LABTEK TYP2M NITROGEN GENERATOR in an upright position or in the shipping crate.
- Keep all hoses dry so you don't get the moisture in the generator or storage tank upon hookup.

IV. Mounting Your LABTEK TYP2M Nitrogen Generator

It is always recommended that the LABTEK TYP2M NITROGEN GENERATOR be wall mounted or mounted on its storage tank.

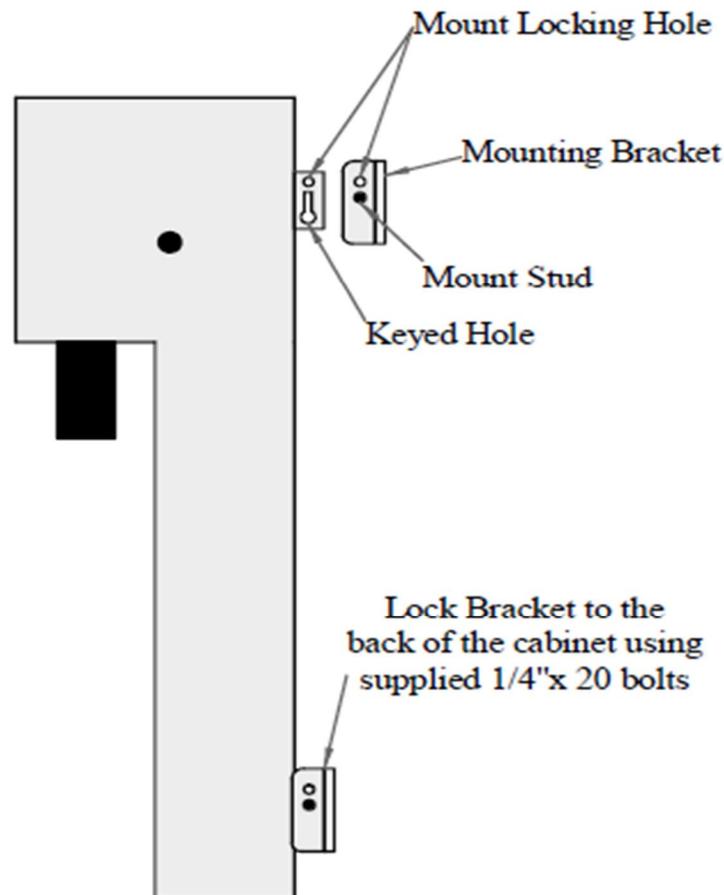
Tank Mounting:

If tank mounted, the tank should be anchored to a concrete floor using proper sized anchors. The LABTEK TYP2M NITROGEN GENERATOR should always be installed indoors in an environment between 40° and 90° F in the upright position where it will not be damaged by water or moving equipment.



Wall Mounting:

When wall mounting; use 4 wall anchors that can support at least 200lbs combined at the 4 points of the supplied mounts. The holes on the mounts have 16" center-to-center holes for mounting to a standard studded wall. Always use studs when possible to support the unit. First, locate the height and location of the top mounting bracket. Mount the first bracket to the wall with the *Mount Lock Hole* to the top. Make sure the mount is level. Secure the second bracket to the lower mount tab on the back of the LABTEK TYP2M Nitrogen Generator. Using the supplied 1/4"x20 screws and nuts, lock the bracket to the cabinet using the *Mount Lock Holes* on the bracket. Hang the entire cabinet on the top mount by sliding the *keyed hole* (on mounting tabs on the back of the cabinet) over the mounting bracket's stud (as shown in drawing). Once you have the cabinet hung on the wall, you can put the 2 extra locking bolts into the *Mount Lock Holes* on the top bracket. Then you must anchor the bottom bracket to the wall for full support of the cabinet.



V. LABTEK TYP2M NITROGEN GENERATOR Installation and Commissioning

The LABTEK TYP2M NITROGEN GENERATOR System can be installed with one or multiple tanks. It is necessary to use caution when working with pressurized gas, making sure that all fittings and gas lines are installed correctly. Always leak check every line before using the system.

Note: Line leaks will cause the LABTEK TYP2M NITROGEN GENERATOR to run excessively, shortening its life.

A basic installation layout is shown in the next section, but your system could be much more complex due to multiple taps. These lines can be split individually to provide N₂ to all of your stations.

You should always install a valve (on/off) on each individual line. Never detach a line with pressure on it before closing the valve; you could cause damage to the equipment or bodily injury.

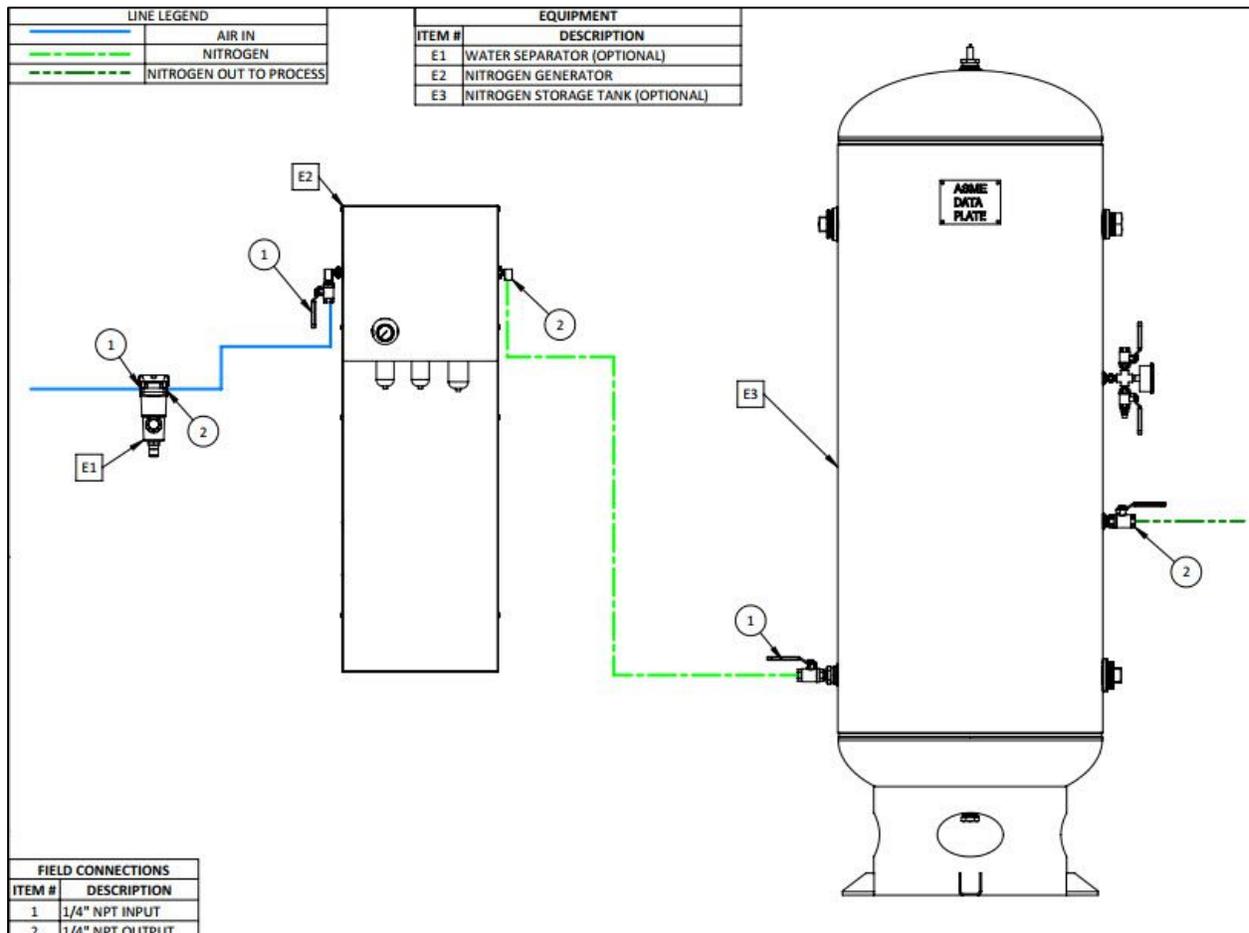
If your system requirements are more involved, please consult your sales representative or equipment installer for a customized installation drawing.

1. The LABTEK TYP2M NITROGEN GENERATOR is supplied with quick disconnect fittings and Push-Lok Hose w/connectors.
2. Install all the proper fittings onto storage tank using Teflon tape or similar as shown in the diagram to fit your installation.
3. Install the quick-connect nipple and valved nipple to the Inflator/Deflator. The smaller nipple goes on the inlet (left) and the larger valved nipple on the output (right).
4. Connect your hose going from the Storage Tank to the Inflator/Deflator first. Cut to length your hose and push the proper fitting (see diagram) into the hose. You may want to put a drop of oil on the fitting to push it on easy.
5. Install the hose from the Storage Tank to the LABTEK TYP2M NITROGEN GENERATOR using the proper supplied connections (see diagram). The outlet of the LABTEK TYP2M NITROGEN GENERATOR

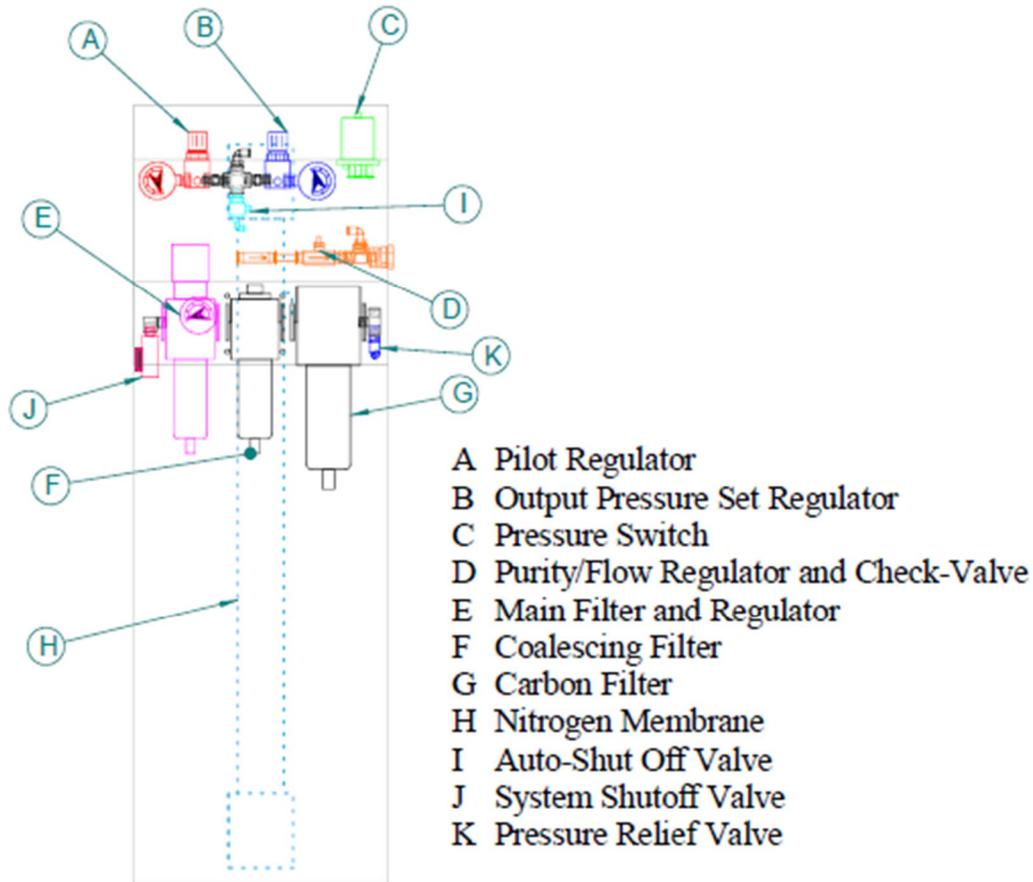
- should be a non-valved nipple on an elbow. Use Teflon tape or similar on the threads.
6. Turn the tank outlet valve to the off position so that the system can be charged up.
 7. Install the inlet valve on the LABTEK TYP2M NITROGEN GENERATOR's Air Inlet Connection.
 8. Make sure that the LABTEK TYP2M NITROGEN GENERATOR's System ON/OFF Valve is in the OFF position.
 9. Install the Supply Line coming from the air compressor to the bulk water separator and then to the LABTEK TYP2M NITROGEN GENERATOR's Air Inlet. The bulk water separator should be in a place that water can expel on the floor or be piped to a drain. A Pipe Nipple and Push-Lok fitting is supplied with each bulk water separator.
 10. Once both connections are made and the air compressor is on, you can slowly open the System's On/Off Valve.
 - a. You will hear air rushing through the system and N2 filling the storage tank.
 - b. If you hear a leak or have a bad connection, shut the valve off and make the correction.
 - c. If there is a leak within the unit, remove the cover and locate the issue. If you have to replace any parts, only use factory parts supplied from your distributor or South-Tek Systems. Consult the factory if there are any questions.
 11. Once the Storage Tank charges up to set point (pressure gauge is on the tank), you will hear a small puff of air and the system's internal preset pressure switch will close a valve blocking off the supply line located just after the filters.
 - a. This will save air and time on your compressor's motor.
 - b. This also prolongs the life of the nitrogen generator's media and filter life.
 12. When you draw N2 off the system, the pressure switch will open the valve and allow the supply line to refill the storage tank automatically. The pressure switch cuts the supply line on at 15psi below set point. Note: Both pressures could be +/- by up to 3%.

Leak Checks:

1. After the system has completely filled the Storage tank, turn the System's Inlet and Outlet Valves to the off position and let sit for a few minutes, you should see the system hold pressure on the storage tank. This will prove the system's integrity.
2. Now, open the Outlet valve and leave the Inlet Valve Closed. Wait a few minutes and see if the pressure drops. If it does you have a leak downstream of the tank. Check your hose connections and any splits that you have made.
3. If you close the inlet valve and are not using air off of the compressor at any other station, the compressor should fill up and shut off, if it drops pressure at the compressor, you have a leak somewhere before your system; advise the customer or repair.



Appendix: LABTEK TYP2M Nitrogen Generator Part Identification



All Settings are Factory Set and should not be changed in the field without proper diagnostic equipment. Any changes to the regulators will affect the performance and purity of the system's output and could damage the system.

Contact South-Tek Systems before any changes are made.

- Consult your sales representative for any spare parts lists or replacements.
- Only use factory parts in the LABTEK TYP2M NITROGEN GENERATOR. Substitute parts may be inferior and cause damage to your system.
- Warranty may be void if factory replacement parts are not used.

Warranty

The LABTEK TYP2M NITROGEN GENERATOR 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 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 Systems' facility or at a LABTEK TYP2M NITROGEN GENERATOR 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 Systems 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 or unauthorized modifications. South-Tek Systems is also not liable for any losses (including CO2), 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 at:

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Wilmington, NC 28401

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