



Oil and Gas Solutions

LSN2.com

The Most Reliable, Bullet-Proof High-Performance Systems in North America...PERIOD.

A big claim? Yes, but backed up and proved by more than 6 million hours of installed machine usage, with 99.9+% uptime, and further backstopped by Liberty Systems 24/7, customer-delighting field support...all made transparently real to you by our many "happy customer" references from tough-to-please general managers, engineers, maintenance techs, and business owners, and available to you in our proposals.

We like to make your inner bean-counter happy, with a laser focus on delivering you maximum cost savings versus purchased nitrogen gas to make your nitrogen generator investment payback quickly to the bottom line, plus we fulfill on the inherent promise of always available, never run out of gas convenience and a much safer work environment versus the cost, hassle, and contract headaches associated with buying nitrogen via traditional tank and cylinder suppliers

Your typical desktop engineer hasn't lived the life of a maintenance and support mechanic, we have and you benefit from this know how. To top off our machine reliability crusade, our founders insisted that their machines be built under rigid ISO 9001 quality standards, in place and certified since 2008.

Product Blanketing

By placing an inert gas blanket over the liquid in the storage tank, a positive pressure can be maintained preventing the stored product from vaporizing to atmosphere. Inerting also manages combustion potential and product contamination.

Vessel Inerting

Nitrogen introduced into vessels, such as railcars, mills and silos, will help protect those spaces from explosion. By lowering the oxygen content of air to an acceptable level, it becomes difficult for the air / dust mixture to reach it's ignition point. Each application is unique and rarely requires that all the oxygen be removed. Although nitrogen is one part of the equation, moisture content and temperature may also play a role in determining the acceptable level of oxygen that may be present.

Pipeline Purging

There are two common types of pipeline purging. One method, is to pressurize a pipeline with an inert gas such as nitrogen to push or dilute an existing gas from the pipeline. Once the level of oxygen in the pipeline is reduced to a threshold below ignition point and the pipeline is "gas-free" the inert gas is vented to the atmosphere.

The second practice involves inserting a foam plug or "pig" into a section of pipeline. Inert gas is then pumped in behind the pig. This practice is sometimes necessary to purge the pipeline of product at the end of a production run.

Optional 3 Year Warranty

Our after sales support group has had it pretty easy over the years. The systems are so strong and dependable we took our industry leading two year warranty and made it three years.

Silver, Gold, Platinum

Liberty offers three package tiers, Silver, Gold and Platinum. Each tier has it's benefits. Want to keep it simple? Choose the Silver package. Interested in a variable frequency drive compressor? Request a quote for our Gold package. Want a system with some of the best service technicians in the world? Choose our Platinum package.



Solutions

Typically, blanketing, inerting and purging are accomplished with nitrogen levels below 99.0%. These applications are perfectly suited for a membrane based nitrogen generator. Applications requiring large flow rates, or nitrogen purities greater than 99.9%, PSA (pressure swing adsorption) technology nitrogen generators will be offered.

Our nitrogen generators are all designed to run 24/7.

Benefits

We provide solutions and help business conserve money by supplementing or replacing their current nitrogen supply with the use of in plant nitrogen generators. With nitrogen generation, your nitrogen expense typically goes down when compared to traditional sources of nitrogen. There is no loss of nitrogen due to evaporation and no missed deliveries.

Series M

Series M are air separation membrane based. All systems include our proprietary pre filtration system. They may include an air compressor and compressed air tank along with the nitrogen generator. Liberty Systems took the original membrane separation designs from the early 2000's, improved them and now have hundred's in the field operating failure free for more than ten years.

Series M1

Series M1 nitrogen generators work with your compressed air supply to produce nitrogen at -80°F pressure dew point producing very economical source of nitrogen gas. The systems have no moving parts and do not require electricity. With proper preventive maintenance, quality supply air and our proprietary media blend that is part of the pre-filtration system, series M1 nitrogen generators are expected to have a life of more than 10 years.

Series M3

Series M3 nitrogen generators are skid units. The package includes a fixed speed or variable frequency drive rotary screw air compressor, a compressed air tank, our proprietary pre filtration system and a compressor condensate oil water separator. Series M3 nitrogen generators have a standard delivery pressure of 125 psig that can be regulated down to desired process application pressure using the pressure regulator that is included as part of the package.

Series M5

Series M5 nitrogen generators are skid units, operating at elevated pressure offering you the ability to store accumulated nitrogen when large quantities are needed in a short period of time. The package includes a fixed speed or variable frequency drive rotary screw air compressor, a compressed air tank, our proprietary pre filtration system and a compressor condensate oil water separator. Series M5 nitrogen generators have a standard delivery pressure of 204 psig that can be regulated down to desired process application pressure using the pressure regulator that is included as part of the package.

Series P

Series P are PSA (pressure swing adsorption) nitrogen generators. As with our series M, all systems include our proprietary pre filtration system. They may include an air compressor and compressed air tank along with the nitrogen generator and associated tanks. To get elevated pressures for storage capabilities, a booster compressor can be offered. We will work with you to determine the purity level desired for your application, up to 99.999%.

Series P1

Series P1 nitrogen generators are PSA based and work with your compressed air supply. The quality of that compressed air supply is vital to the longevity of your nitrogen generator so we include our proprietary Advanced Media Tube (AMT) to ensure a -40° F compressed air dew point to help ensure the life of the carbon molecular sieve (CMS). Series P1 nitrogen generators can produce gas containing as little as 10 ppm O₂ (99.999%).

Series P3

P3 Nitrogen gas generators are PSA based and include a fixed speed or variable frequency drive rotary screw compressor. To create a P3 we simply add a source of compressed air to a series P1.

Series P7

P7 Nitrogen gas generators are PSA based and include a fixed speed or variable frequency drive rotary screw compressor in addition to a booster compressor offering you the ability to store accumulated nitrogen when large quantities are needed in a short period of time. Typical delivery pressures of 27 barg (400 psig).

Extended Warranty

Liberty Systems offers the best extended warranty in the industry. How can we do this, simple, build a package that is strong and dependable. It is in our best interest that the system we provide you is worry free and keeps producing. The last thing we want is our name, one of the most recognized in the industry, to get tarnished because the system your down.

Liberty Systems offers an optional "up to" three year warranty. For you to capitalize on this, all we ask is you perform the preventive maintenance as scheduled, document that the maintenance was performed and submit an oil sample to an independent lab for analysis. Why the oil sample, because, reading an analysis of your oil we can determine if condensation, metal fragments or possibly a high acid content is present. If there is a high acid content, which can damage the air compressor, we can find the source and eliminate it before something catastrophic happens.

For us, it is about being proactive, we have a team in our after sales support group that are in communication with your maintenance team so you can enjoy worry free operation of your equipment.

Below is a portion of the three year warranty agreement. The entire document is available upon request.

The Three Year Warranty program is contingent on the following provisions:

The optional "Three Year Warranty" program applies to Liberty Systems Series D5, D7, D9, M5, M7, M9, P5, P7, P9 and P11.

- Liberty Systems' normal warranty policies and procedures concerning warrantable failures, credits for labor, travel and mileage and freight charges apply to the warranty period and are as follows:
 - Stage one: **Parts and labor.** *Months one (1) through (24) twenty-four from date of startup or (30) thirty months from date of shipment.*
 - Stage two: **Parts only.** *Months (25) twenty-five through (36) thirty-six from date of startup or (42) forty-two months from date of shipment.*
 - Stage two labor, lodging, travel expenses and meals will be billed as a direct pass through to the customer during the extended warranty period.

To qualify for the "Three Year Warranty", a customer must purchase preventive maintenance items and perform preventive maintenance requirements. The customer must keep detailed records as to what and when preventive maintenance was performed.

To qualify for the "Three Year Warranty", a customer must purchase the first 4000 hours of preventive maintenance items from Liberty Systems at the time of system purchase.

- Should the customer exceed 4000 hours of operation within any twelve (12) month period, additional preventive maintenance items shall be required.

To extend the warranty into subsequent years, the customer shall continue to purchase preventive maintenance items as required through the term of the "Three Year Warranty" agreement.

To further qualify for the Liberty Systems "Three Year Warranty" program, the customer must submit an oil sample for analysis every 2000 hours during the term of the warranty period.

Platinum Package

Our Platinum packages come standard with fixed speed load / unload Kaeser rotary screw air compressors and gas boosters.

Kaeser Rotary Screw Air Compressors

Kaeser compressors have been designed from the ground up with the user in mind. Fewer wearing parts and premium materials ensure reduced maintenance requirements, longer service intervals and extended service life.

Each component from the inlet air filter to the discharge flange have been carefully selected with performance in mind. Kaeser compressors are up to 30% more efficient than the competition.

Variable frequency drive air compressors are offered as an option.

Kaeser employs more than 5500 people in over 100 nations and they continually add to the service and distribution network.

Gold Package

Our Gold package is supplied with an Ozen variable frequency drive rotary screw air compressor and an oil injected load unload booster compressor. For systems greater than 6000 scfh (100 scfm), a market leading variable frequency drive rotary screw booster compressor is standard.

Ozen Rotary Screw Air Compressors

Ozen is a packager. They source the finest components for their air compressors and booster compressors. They are assembled in Konya, Turkey and the US corporate headquarters are located in Charlotte, NC.

Their variable frequency drive is manufactured by Danfoss, the airend is produced by Rotorcomp, the electrical contactors and starters are Siemens and the motors are manufactured by WEG.

Ozen is one of the leading producers in Eastern Europe and the Middle East. It has sales and service activities in 20 countries, through 100 distributors. Exports made to 45 countries constitute 30% of all sales.

Silver Package

Our Silver packages come standard with fixed speed load / unload Hertz rotary screw air compressors and gas boosters.

Hertz Rotary Screw Air Compressors

Hertz Kompressoren was founded in Germany with aim of manufacturing air compressors with high level of German engineering. Hertz is a premium brand of Dalgakiran Group Company, one of the leading air compressor producers in the world.

Hertz rotary screw air compressors are standard with a IP55 electric motor and IE3 efficiency class. The air compressors are designed to be serviced easily.

Hertz Kompressoren is an international company with global presence engaged in designing, manufacturing and sales of air compressors and compressed air equipment.

For more information about opportunities regarding your application, please contact us or visit our website.

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