

DRIVEN BY AIR.



NEXUS Nitrogen Generators

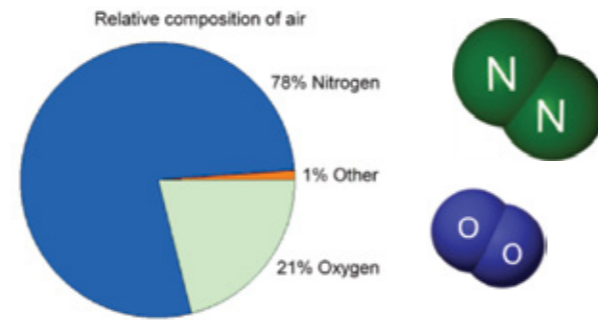


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Nitrogen – The Science

Nitrogen is all around us, mixed with Oxygen and other gases. The benefits of filtering air to remove Oxygen and other gases to produce rich Nitrogen has a number of benefits in both tyre and industrial applications.

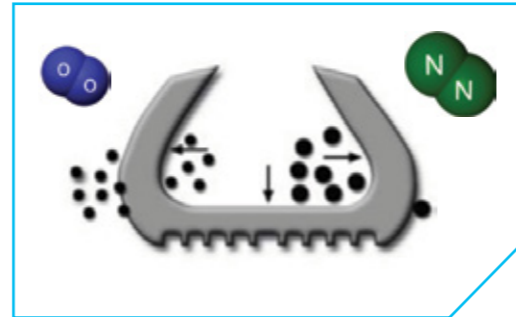


Relative composition of air and molecular structure and size of the two main gases found in air

Loss of pressure through Oxygen permeation/migration

Two of the main gases found in normal air, Oxygen and Carbon Dioxide have a small molecular structure which enables them to permeate or migrate through the rubber tyre wall much faster than Nitrogen molecules which have a larger molecular structure.

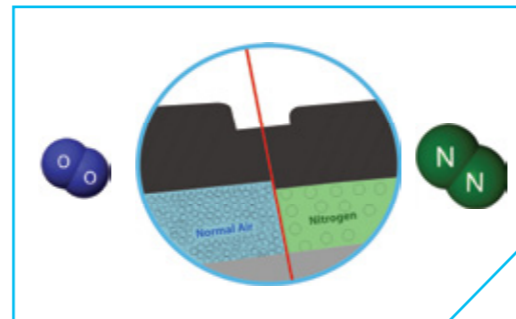
“In the 90-day static laboratory test, the inflation pressure loss for new tyres** inflated with Nitrogen was approximately two thirds of the loss rate of new tyres inflated with air¹”



Tyre overheating through Oxygen reactivity

Oxygen molecules found in normal air, due to its moisture content, reacts to the temperature build-up when a tyre is in motion over long journeys. This causes the Oxygen molecules to react and create energy which causes the tyre to overheat and expand.

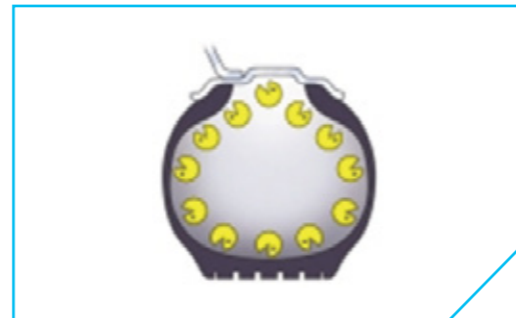
“It is perhaps a fair assumption to say that there would be some improvement in tyre durability if Nitrogen was used as the inflation media²”



Degrading tyres and wheel rims through oxidisation

Over time the moisture present in Oxygen can degrade the inner tyre wall (especially on commercial vehicle tyres which has steel inside them) and also cause oxidisation or rust build up on the inner wheel rim. Nitrogen is a very dry gas which means it doesn't oxidise or react with materials it comes into contact with.

“Increased Oxygen levels in the tyre's inflation gas can increase the oxidation of the rubber materials in the tyre and thereby reduce its durability even on some short-term testing³”



Tyre combustion in high temperature environments

Fire is a chemical reaction which needs three things to be present so it can happen: **heat**, **fuel** and **Oxygen**. Due to the structure of a tyre when it **heats** up in high temperature environments it is prone to catching fire as it represents a **fuel**. Normal air inflated tyres contain 21% **Oxygen** which is paramount for a chemical reaction.

By inflating with Nitrogen you are reducing the **Oxygen** content to a level where the potential for combustion is almost nil.

“Large tyres used on off-road vehicles, for example the mining industry, use Nitrogen to prevent auto ignition of the tyres due to the high temperatures²”



Image source: www.miningaustralia.com.au

How can inflating with Nitrogen benefit the road user or fleet manager?

...Better fuel economy

By reducing the speed of permeation or migration of gas through a tyre it will stay inflated correctly for longer. This prevents extra rolling resistance on the engine and subsequent increase in fuel use.

“All the tests conducted clearly indicate that Nitrogen inflation in passenger car tyres can improve passenger safety and tyre life while improving the fuel economy of the vehicle⁴”

ARTICULATED COMMERCIAL VEHICLE FUEL SAVING EXAMPLE SCENARIO



Distance per year (miles)	80,000
MPG (average articulated lorry)	9
Diesel price per gallon (02/14)	£6.22
Total fuel consumption cost per year, per vehicle with air inflated tyres	£55,289
Harris Transport Nitrogen v Air inflated tyres fuel saving (3.3%)	£53,523
Saving per year, per vehicle	£1,766
100 vehicle fleet, annual saving	£176,624.72

EXAMPLE NITROGEN TESTING RESULTS

Operator	Harris Transport, Canada
Testing duration	9 months – winter to autumn
No of trucks tested	97, 44 on Nitrogen vs 53 on normal air
Tyre size	11.00 R24.5
Monitoring equipment	SensorTRACKS data
Fuel efficiency results	Average 3.3% better fuel economy with Nitrogen against normal air

...Extended tyre life

Tyres that stay inflated to the correct pressure for longer will last a lot longer. If the correct amount of rubber is in contact with road surface the tyre tread will wear at a much slower rate. On commercial tyres that are re-treaded you can increase the tyre casing life by reducing Oxygen content which will increase the number of re-treads possible and thus reducing the fleet managers tyre replacement costs.

VAN TYRE SAVING EXAMPLE SCENARIO



Distance per year (miles)	50,000
Average tyre life (miles)	20,000
Average cost per tyre	£100
Total cost per tyre, per year with air inflated tyres	£250
Total cost per tyre, per year with Nitrogen inflated tyres (-22%)	£205
Saving per year, per vehicle based on 4 tyres per vehicle	£180
100 vehicle fleet, annual saving	£18,000

EXAMPLE NITROGEN TESTING RESULTS

Tester	Dr John Daws, Daws Engineering LLC
Laboratory testing period	30 days, simulated to represent a 6 year period
Tyre size	235 75 R15
Tyre life results	Increase in up to 22% in tyre life with Nitrogen v Air inflated tyres

...Increased safety

By taking all the Oxygen from inside your tyre you will reduce chances of a dangerous blowouts from reduced energy build-up and subsequent tyre expansion over long journeys. Removing Oxygen from the tyre will also reduce the potential for tyre fires or tyre explosions to a very low level.

Many of the world's biggest mining companies now stipulate the use of Nitrogen in tyres for all vehicles entering the mines due to health and safety reasons.

How can offering the Nitrogen inflation service benefit the tyre service provider?

...Increase profits

Charge £1 per tyre and pay back the cost of a Nitrogen generator in less than 3 months!

...Increase customer retention

Offer free Nitrogen top-ups for life and keep customers coming back!

...Motivate and reward staff

Offer a Nitrogen sale bonus scheme for your fitters, the more they sell the more they earn!

Revenue generation

The average tyreshop charge to fill a tyre with Nitrogen today can vary widely, anywhere from £0.50-£5 per tyre.

The average lifespan of internal Oxygen filters is 3-6 years depending on usage and level of pre-filtration. Based on the above example scenario you could make **£23,400 to £46,800** over the lifespan of the filters.

In addition to this, you could choose to bundle Nitrogen with other services making the cost per tyre higher. Some tyreshops charge less (or nothing) per tyre if you purchase tyres from them as an added service.

However the following are some examples of how you can generate extra revenue by offering the Nitrogen service:

New tyre sale charge

- Increase the price of the tyre and include Nitrogen inflation in every sale (as standard) but don't include on the bill.
- Add on to the bill as a flat fee with new tyre sale as standard - e.g £1.50 each.
- Offer to convert tyres even when not all are being changed. Charge £2 per tyre (don't forget the spare) or offer a full conversion on all four for £6.

Nitrogen conversion for air inflated tyres

- Nitrogen conversion for all 4 - £8. This is higher than with a new tyre sale due to the additional steps required, such as using PCL's purge-and-fill device, etc.
- Cost per tyre - £2 (don't forget the spare).

New customers with Nitrogen already in the tyres

Test the Nitrogen purity. If it's below 93%, reconvert and charge full price. If it's above 93%, top-off at no charge as a customer service and encourage customer retention/repeat business.

Commercial tyre service providers

- Offer Nitrogen as part of the service contract, charge an annual fee for inflating all the tyres you replace/service with Nitrogen.
- Charge 1p per kilometre for Nitrogen inflated tyres on a P.P.K contract, explaining how the savings will pay for the charge in less than 6 months of the average 2 year contract.

Car dealerships

New car sale options

- Pre-charge inventory - £20. Indicate the vehicle has been installed with a beneficial savings package.
- Offer as a lifetime Nitrogen top-up or purge service for the life of the vehicle if customers include Nitrogen inflation with a new car purchase.

Reward your people

Nothing motivates employee's more than direct compensation for effort. Incorporate a bonus programme for your fitters to sell the concept. We recommend £0.50 per tyre or £2 per vehicle (based on all 4 tyres being converted). You can adjust your price point if needed to accommodate the bonus.



The most sophisticated and comprehensive range of Nitrogen generators and built-in tyre inflators on the market

Superfast Nitrogen inflation systems, whatever your market

Revolutionary new unit for automatically inflating different front and rear tyre pressures simultaneously

Options with built in tyre inflators for inflating four tyres at once

Automatic digital inflation built-in to all our products

Nitrogen generator only designed for use with existing delivery equipment in all manner of industrial applications

All our units are assembled, tested and calibrated at our UK base in Sheffield



Combining the latest in high performance Nitrogen generation with leading automatic inflation technology where individual pressures can be set for front and rear tyres. This new range of equipment is designed to cover every application of Nitrogen inflation from small passenger cars to large commercial vehicle and OTR tyres in very demanding environments.

KEY PRODUCT BENEFITS

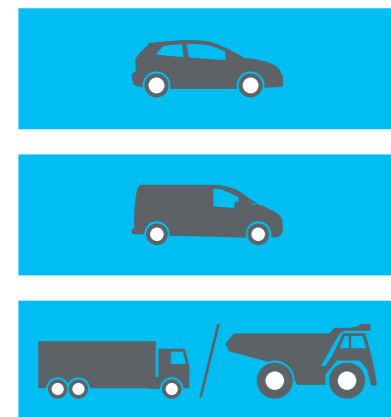
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- Revenue generation for Tyre Service Providers
-
- Both Nitrogen fill and Air to Nitrogen conversion service (purge) for up to 4 tyres simultaneously
-
- 4 separate digital inflator heads allow for setting different pressures for front and rear tyres - speeds up vehicle turnaround and productivity for the volume tyre bay
-
- Low life time costs - with high grade filtration and high performance components
-
- Guaranteed accuracy and robustness with ceramic pressure sensor
-
- Models available for every inflation application - Car, Van, Truck & OTR tyres
-

KEY PRODUCT FEATURES

-
- Bigger filtration systems for super-fast Nitrogen delivery
-
- New improved valves and fittings
-
- Mobile with 90mm castors for improved flexibility and positioning options
-
- External Nitrogen purity check point
-
- Internal tanks meet CE standards
-
- Easy to operate and quick installation
-
- External Nitrogen tank contents gauge
-
- Electronic preset tyre inflation with auto-start and auto shut-off inflation
-
- Automatic flat tyre detection
-
- 1 purge inflation cycle from flat 2 purge inflation cycle as standard
-
- Ceramic sensor - accuracy up to ± 0.5% of full scale reading
-
- Fully tested and calibrated with certificate supplied
-
- Available in single phase supply 120v or 230v options
-

In the 90-day static laboratory test, the inflation pressure loss for new tyres inflated with Nitrogen was approximately two-thirds of the loss rate of new tyres inflated with air¹

MAXIMUM APPLICATION



PART NUMBER	DESCRIPTION	MINIMUM COMPRESSOR SUPPLY	MAXIMUM FLOW RATE
NEX21(A)02/MQ	NEXUS N2 Generator & multi-head inflator Range	368l/min (13CFM) @ 10 BAR (145psi) supply	70l/min (2.5CFM)
NEX61(A)02/MQ	NEXUS N6 Generator & multi-head inflator Range	538l/min (19CFM) @ 10 BAR (145psi) supply	200l/min (7CFM)
NEXMI(A)/MQ	NEXUS Membrane Generator & multi-head inflator Range	1523l/min (54CFM) @ 12 BAR (174psi) supply	580l/min (20CFM)

NEXUS Nitrogen Generator and Built-in Digital Multi-head Tyre Inflator Range

Assembled, tested and calibrated in Sheffield, UK



Combining the latest in high performance Nitrogen generation with leading automatic inflation technology where four tyres can be inflated simultaneously. This new range of equipment is designed to cover every application of Nitrogen inflation from small passenger cars to large commercial vehicle and OTR tyres in very demanding environments.

KEY PRODUCT BENEFITS

-
- Revenue generation for Tyre Service Providers
-
- Both Nitrogen fill and Air to Nitrogen conversion service (purge) for up to 4 tyres simultaneously
-
- 4 outputs and four hoses supplied as standard for automatic conversion of up to 4 tyres from air to Nitrogen increases productivity
-
- Low life time costs - with high grade filtration and high performance components
-
- Guaranteed accuracy and robustness with ceramic pressure sensor
-
- Models available for every inflation application - Car, Van, Truck & OTR tyres
-

KEY PRODUCT FEATURES

-
- Bigger filtration systems for super-fast Nitrogen delivery
-
- New improved valves and fittings
-
- Mobile with 90mm castors for improved flexibility and positioning options
-
- External Nitrogen purity check point
-
- Internal tanks meet CE standards
-
- Easy to operate and quick installation
-
- External Nitrogen tank contents gauge
-
- Electronic preset tyre inflation with auto-start and auto shut-off inflation
-
- Automatic flat tyre detection
-
- 1 purge inflation cycle from flat 2 purge inflation cycle as standard
-
- Ceramic sensor - accuracy up to ± 0.5% of full scale reading
-
- Fully tested and calibrated with certificate supplied
-
- Available in single phase supply 120v or 230v options
-

NEXUS Nitrogen Generator & Built-in Digital Tyre Inflator Range

Assembled, tested and calibrated in Sheffield, UK



If the Oxygen concentration inside the tyre is reduced by 6%, the life of the tyres can be increased by up to 22%⁵

MAXIMUM APPLICATION	PART NUMBER	DESCRIPTION	MINIMUM COMPRESSOR SUPPLY	MAXIMUM FLOW RATE
	NEX21(A)02	NEXUS N2 Generator/ inflator Range	368l/min (13CFM) @ 10 BAR (145psi) supply	70l/min (2.5CFM)
	NEX61(A)02	NEXUS N6 Generator/ inflator Range	538l/min (19CFM) @ 10 BAR (145psi) supply	200l/min (7CFM)
	NEXMI(A)	NEXUS Membrane Generator/inflator Range	1523l/min (54CFM) @ 12 BAR (174psi) supply	580l/min (20CFM)



The latest in high performance Nitrogen generation. The PCL NEXUS series generators allow the operator to use existing equipment to deliver high purity Nitrogen to the desired application. This new range of Nitrogen generators can cover every application of Nitrogen inflation from small passenger cars to large commercial vehicle and OTR tyres in very demanding environments.

KEY PRODUCT BENEFITS

- Revenue generation for Tyre Service Providers
- Cost effective Nitrogen delivery with very low maintenance
- Low life time costs - with high grade filtration and high performance components
- Guaranteed tank pressure accuracy and robustness
- Models available for every inflation application - Car, Van, Truck & OTR tyres

KEY PRODUCT FEATURES

- Bigger filtration systems for super-fast Nitrogen delivery
- New improved valves and fittings
- Mobile with 90mm castors for improved flexibility and positioning options
- External Nitrogen purity check point
- Internal tanks meet CE standards
- Easy to operate and quick installation
- Digital Nitrogen tank contents gauge
- Ceramic sensor - accuracy up to ± 0.5% of full scale reading
- Fully tested and calibrated with certificate supplied
- Available in single phase supply 120v or 230v options

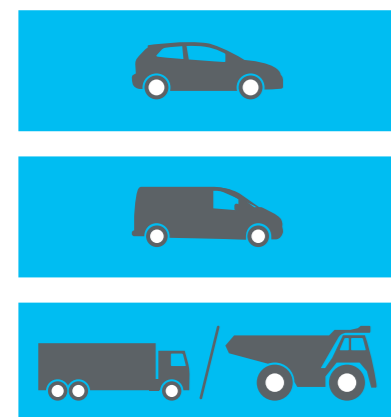
NEXUS Nitrogen Generator Only Range

Assembled, tested and calibrated in Sheffield, UK



NASA says the space shuttle tyres don't explode in space because they're filled with Nitrogen, which has more stability at different altitudes and temperatures than regular air⁶

MAXIMUM APPLICATION



PART NUMBER	DESCRIPTION	MINIMUM COMPRESSOR SUPPLY	MAXIMUM FLOW RATE
NEX2G(A)02	NEXUS N2 Generator Only Range	368l/min (13CFM) @ 10 BAR (145psi) supply	70l/min (2.5CFM)
NEX6G(A)02	NEXUS N6 Generator Only Range	538l/min (19CFM) @ 10 BAR (145psi) supply	200l/min (7CFM)
NEXMG(A)02	NEXUS Membrane Generator Only Range	1523l/min (54CFM) @ 12 BAR (174psi) supply	580l/min (20CFM)



The most innovative digital Nitrogen inflation device on the market.
 The NEXUS Compact is suitable for all types of Nitrogen tyre inflation applications where space and weight are at a premium. Small enough to fit into mobile tyre service vehicles, yet fast enough to inflate the biggest of commercial tyres. Models available for workshops, forecourts and vehicle mounted applications.

NEXUS Compact Nitrogen Generator & Built-in Digital Tyre Inflator

KEY PRODUCT BENEFITS

- Revenue generation for Tyre Service Providers
- Both Nitrogen fill and Air to Nitrogen conversion service for up to 4 tyres at once
- Compact footprint and lightweight design allow for use in a number of applications
- Low life time costs - with high grade membrane Nitrogen production
- Guaranteed inflation accuracy and robustness with ceramic pressure sensor
- Models available for inflating large OTR tyres from mobile service trucks




KEY PRODUCT FEATURES

- High speed digital Nitrogen inflation up to and including large commercial tyres
- High purity delivery, up to 99% purity (depending on speed requirements)
- Brand new space-saving membrane filtration device and cabinet design
- Total unit weight only 30kg, significantly lighter than any other Nitrogen generator and inflator in the NEXUS range
- Cab can be fitted with brackets for attaching to the inside or outside of mobile tyre service vehicles
- Weatherproof - conforms to electricity standard IP66
- Various supply voltages available in single phase supply (12v, 24v, 120v or 230v)
- Internal tanks meet CE standards
- Easy to operate - plug and play
- Designed for 1 OTR tyre, 2 HGV tyres or up to 4 passenger car tyres at once
- Ceramic sensor - accuracy up to $\pm 0.5\%$ of full scale reading
- Calibrated with certificate supplied

Assembled, tested and calibrated in Sheffield, UK



All the tests conducted clearly indicate that Nitrogen inflation in passenger car tyres can improve passenger safety and tyre life while improving the fuel economy of the vehicle⁴

MAXIMUM APPLICATION	PART NUMBER	DESCRIPTION	MINIMUM COMPRESSOR SUPPLY	MAXIMUM FLOW RATE
	NEXCI(A)/W	NEXUS Compact Workshop Nitrogen Generator & built-in inflator	980l/min (35CFM) @ 11 BAR (160psi) supply	300l/min (10CFM)
	NEXCI(A)/M	NEXUS Compact Vehicle Mounted Nitrogen Generator & built-in inflator	980l/min (35CFM) @ 11 BAR (160psi) supply	300l/min (10CFM)
	NEXCI(A)/F	NEXUS Compact Forecourt Nitrogen Generator & built-in inflator	580l/min (20CFM) @ 10 BAR (145psi) supply	168l/min (6CFM)



Accessories

The PCL Nitrogen Analyser gives you the actual Nitrogen percentage in your vessel. Most other systems in the market show you the Oxygen percentage and require a calculation to convert it to the Nitrogen percentage.

The rugged ergonomic design enables ease of use in motor racing pits, workshops, fleet control, tyre stores, lube shops and auto dealerships. Ease of use, fast reaction time and large digital display make the Nitrogen Analyser the perfect choice.

The battery life is extended by an automatic power off function. Both the sensor and battery can be easily replaced.



PART NUMBER	DESCRIPTION	SPECIFICATIONS	
N2A001	Nitrogen Analyser	Measurement Range	70-100% Nitrogen
N2AS001	Nitrogen Analyser replacement sensor	Display Resolution	0.1 vol %
		Measurement Cycle	0.5 secs
		Response time 90%	less than 2 seconds
		Auto Off time delay	5 mins
		Accuracy	+/-0.5 vol% from 0 - 50 vol% +/-2 vol% from 50 - 99 vol%

PRODUCT SAFETY INFORMATION

Do not connect the Nitrogen Analyser to closed pressure systems above 175psi, 12bar or 1200kPa

Spares

PCL offer a full range of all internal spare parts of the NEXUS Nitrogen generator range to allow any dealer or end user to quickly and efficiently repair any unit in the field that needs service or repair.

PCL also offer an individual spare parts and re-installation breakdown booklet for every unit in the range which includes schematic re-wiring diagrams for both pneumatic and electric parts and piping.



NEXUS unit speed comparisons on nominal application tyre sizes

Passenger car tyre sizes

SUPPLY	TYRE SIZE	TARGET PRESSURE	NO OF TYRES	TWO PURGE CYCLE	VALVE CORE	NEX2I SPEED	NEX6I SPEED	TYRE PURITY READING
10 Bar/145psi	225-35 x R17	32 psi/2.1bar	4	Yes	8v1 core Present	06:37	05:42	96-97%
10 Bar/145psi	225-35 x R19	32 psi/2.1bar	4	Yes	8v1 core Present	09:54	06:27	96-97%
10 Bar/174psi	235-55 x R18	33psi/2.2bar	4	Yes	8v1 core Present	12:09	08:16	96-97%

Truck/lorry/HGV tyre sizes

SUPPLY	TYRE SIZE	TARGET PRESSURE	NO OF TYRES	TWO PURGE CYCLE	VALVE CORE	NEX6I SPEED	NEXMI SPEED	TYRE PURITY READING
12Bar/174psi	285-70 x R19.5	116psi/8bar	1	No	8v1 core Present	04:51	03:14	96-97%
12Bar/174psi	285-70 x R19.5	116psi/8bar	1	No	8v1 core Removed	03:30	01:48	93-94%
12Bar/174psi	315-70 x R22.5	116psi/8bar	1	No	8v1 core Present	05:25	03:52	96-97%
12Bar/174psi	315-70 x R22.5	116psi/8bar	2	No	8v1 core Present	N/A	04:53	97.1%
12Bar/174psi	315-70 x R22.5	116psi/8bar	1	No	8v1 core Removed	N/A	03:20	93-94%
12Bar/174psi	315-70 x R22.5	116psi/8bar	2	No	8v1 core Removed	N/A	03:56	93-94%

OTR tyre sizes

SUPPLY	TYRE SIZE	TARGET PRESSURE	NO OF TYRES	TWO PURGE CYCLE	VALVE CORE	NEX6I SPEED	NEXMI SPEED	TYRE PURITY READING
10 bar / 145psi	14.00 x R24	110psi/7.5bar	1	No	8v1 core Present	N/A	14:55*	94.8%
10 bar/145psi	26.00 x R25	60psi/4.1bar	1	No	12v1 core Present	N/A	20:24*	94.3%
7 bar/102psi	24.00 x R35	80psi/5.5 bar	1	No	12v1 core Present	N/A	16:38	94.1%
10bar/145psi	24.00 x R35	130psi/9bar	1	No	12v1 core Present	N/A	42:21*	93.2%

* These speeds are based on a low flow rate 'truck mounted' compressor. With a larger fixed screw compressor with a high CFM output the speed would be increased significantly.

Please note: These speeds are 'nominal' and are based on the compressor supply at PCL's factory or on an OTR site. These speeds will vary depending on compressor flow rate, compressor head pressure, valve condition, valve core type, temperature changes and flow restrictor valve turns.

Installation/training option

Before agreeing installation contract the end user must have

- The necessary space to house the mobile unit (H - 1364, W - 600mm & D - 470mm)
- An adequate (minimum of 8 bar for NEX2 or 10 bar for NEX6/M) and clean air supply with adequate filtration
- Single phase socket within 2.5 meters of where the unit is to stand (or extension lead)
- An Air Hose of the required length and with the necessary end fittings to connect from customer's air supply to the termination point in NEX2, NEX6 or NEXM (1/2" Female fitting)
- Site assistance (if required) to help lift the mobile unit off the pallet/frame used for transportation

PART NUMBER

NXI	<p>INSTALLATION TO INCLUDE TRAINING CUSTOMER'S PERSONNEL ON THE OPERATION/USE OF THE UNIT</p> <p>How to turn the machine on, connect air and electricity supply</p> <p>Connecting hose(s) to tyre(s)</p> <p>Setting Pressure</p> <p>Process for standard inflation</p> <p>Process for conversion/purge cycle</p>
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Maintenance/service option

PART NUMBER

NXM	<p>FIXED PRICE PACKAGE THAT LASTS TWO YEARS INCLUDES</p> <p>Extended warranty to two years (normally 12 months)</p> <p>Two (2) annual service/maintenance visits to include the following</p> <p>Ensure customer happy with performance & speed of unit</p> <p>Carry out Nitrogen purity check (must be 95%+)</p> <p>Check filtration on unit is drained sufficiently and in good working order</p> <p>Check for leaks on ball valve, air inlet, hoses and connectors</p> <p>Check inflator calibration with Master Stick Gauge</p>
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FREE NEXUS Nick POS material

PCL now offer a comprehensive range of point of sale material, incorporating a character 'NEXUS Nick' to allow the tyre service provider to actively promote the Nitrogen concept and encourage new business in an engaging and friendly way.

Each unit sold can be delivered with a POS kit free of charge.



600 x 1800mm exterior banner



594 x 420mm posters



Countertop leaflet dispenser



Staff t-shirts



210 x 99mm 'The Science' leaflet (shown flat)

Tyre customer giveaways

Together with the POS kit PCL also now offer a free pack of giveaway items for the tyre customer to encourage them to choose Nitrogen.

This includes: 100 'N₂' chrome plated tyre valve caps, 25 'N₂' air fresheners and 25 'N₂' trolley coin keyrings. These can also be purchased as replacement packs subject to stock.



N₂ chrome plated tyre valve caps



N₂ car air freshener



'Trolley coin' N₂ keyring

References

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- 4 N. Jalili, Ph.D.P.Venkataraman, "Tyre Nitrogen filling system", A final report to: Industrial Technologies Sector of Ingersoll Rand Corporation" Department of Mechanical Engineering, Clemson University, Clemson, South Carolina, May 2006.
- 5 L. Sabino, "Tyres inflated with de-oxygenated air" Department of Mechanical Engineering, University of Bologna, Bologna, Italy, 2000.
- 6 "Nitrogen Tyre Inflation: Good Enough for NASA", Trucking Info, April 2003.

** Throughout this brochure the original spelling of 'tire', as featured in referenced reports, has been amended to appear as the UK spelling 'tyre'.

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