PEAK GAS GENERATION

KERR Compressor Engineers

*Your local **gas generation** partner*

i-Flow Prime & Mini

Modular & expandable nitrogen **gas generation solutions** for manufacturing industries

A PEAK International Group Company

Discover more at **kerrcompressors.co.uk**

Key **Features**

- **Nitrogen gas, on-demand** - 14 models, capable of supplying up to 285.08 m3/h / 10068 scfh of high quality nitrogen gas, at purities ranging from 95 – 99.9995%
- **Modular expandability** - Future-proof design, with simple cascading technology allows columns & generator units to be easily added as business needs grow
- **Economical & sustainable** - A cost effective, environmentally friendly solution, eliminate the need for ongoing bulk nitrogen gas deliveries
- **Energy saving efficiency** - i-Flow's power saving Standby-Mode means little to no energy is wasted, keeping running costs to a minimum
- **Purity assured** - Get peace of mind with our built-in PurityGuard™ gas monitoring, application safeguard system and integrated air filtration
- **Safe on-site gas supply** - No more health & safety concerns over manual handling, hazardous deliveries & storage of highly pressurized cylinders or cryo-liquid tanks
- **Verified industry compliance** - Independently validated, exceeding EIGA, EC Food Grade, European Pharmacopoeia, JECFA & US FDA standards

Your **sustainable** and **expandable** nitrogen gas generation **solution**

i-Flow Prime & Mini are a modular & scalable range of on-site nitrogen generation systems, capable of producing a continuous supply of nitrogen gas to meet the demands of industrial manufacturing and processing applications. Harnessing the latest in gas purification technologies, the i-Flow range are the most cost effective, energy efficient and economical nitrogen generation systems available on the market. They deliver a wide range of customizable purities and flow rates on a large scale and are suitable for use in numerous industries, including food & beverages, pharmaceuticals & biotechnology, chemicals, electronics, metal fabrication, plastics, rubbers and many more.

i-Flow Prime & Mini generators are the culmination of PEAK Gas Generation's innovations and technological expertise. They build upon over two decades of experience as industry leading gas generation specialists. Designed & engineered in the UK by an ISO 9001 accredited manufacturer, the i-Flow range utilizes the latest Pressure Swing Adsorption (PSA) technologies, optimized for maximum energy efficiency, with over 100 preconfigured flow rates (0.85-285.08 m3/h / 30-10068 scfh) and purities (up to 99.9995%) specifications.

i-Flow generators offer a **total on-demand gas solution**, eliminating the need for bulk nitrogen gas purchase, providing **sustainable on-site nitrogen generation** that allows companies to **control costs**, **reduce their carbon footprint** and enjoy massive benefits in the long run.

Bulk Supply vs **On-site** Generation

Beyond the highly variable costs of industrial gas, supply methods such as cylinders, dewars and bulk liquid storage also create numerous challenges for businesses, as well as many additional and hidden costs, which ultimately impact on the bottom line.

Added costs

- Cylinder or dewar rental & supply delivery charges;
- Bulk liquid storage planning permission, installation, rental & upkeep
- Multi-year purchase contract commitments, with long notice periods

Logistics & safety

- Frequent hazardous truck deliveries to facility
- High pressure storage, with risk of explosive decompression or leaks
- Cylinders & dewars require heavy manual handling

Losses & wastage

- Unpredictable supply timescales
- Bulk supply needs frequent switching & monitoring
- 10% gas returned to supplier & 20% lost to 'off-gassing'
- Downtime = lost revenue

Why buy bulk nitrogen gas when you can **make your own**?

Guaranteed supply
Increased efficiencies, maximum productivity and minimum downtime

Increased safety
No need for pressurized gas storage so safer than bulk delivery options

Less wastage
Consistent and reliable supply means fewer product defects or rejections

Eliminate on-going costs
No more equipment rental, long contracts or re-supply ordering

More sustainable
Reduced carbon footprint by eliminating trucking of cylinders to your site

Future proof
Expandable on-demand N2 generation that meets future needs

Why PEAK Gas **?**

Global leader

PEAK is the leading global manufacturer of nitrogen generators, with over two decades of experience creating gas generation systems.

Turnkey **solutions**

Our team of highly experienced consultants are experts in designing turnkey solutions that perfectly meet company demands and business needs.

Expertise and support

Our vast industry and technological expertise, coupled with world-class aftercare support means we define the benchmark for customer service, innovation, quality and product reliability.

Project management

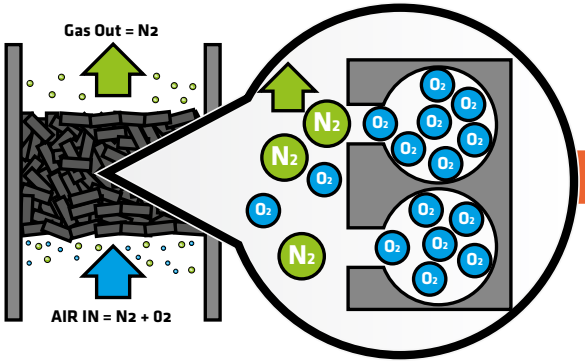
Our project teams manage every stage of the process, through initial consultation, system design, procurement, installation, commissioning and ensure you are kept fully informed at each step.

Global **partnerships**

Together with our industry leading partners in compression & filtration technologies, we offer the best and most diverse mix of technological solutions available on the market.

Reliable and robust **technology**

Based on the latest Pressure Swing Adsorption (PSA) and Carbon Molecular Sieve (CMS) technologies, the i-Flow range has the capacity to deliver a continuous & on-demand supply of nitrogen gas, whilst utilizing an innovative 'Standby-Mode', along with air usage optimization technologies, to ensure maximum energy efficiency and the lowest running costs.

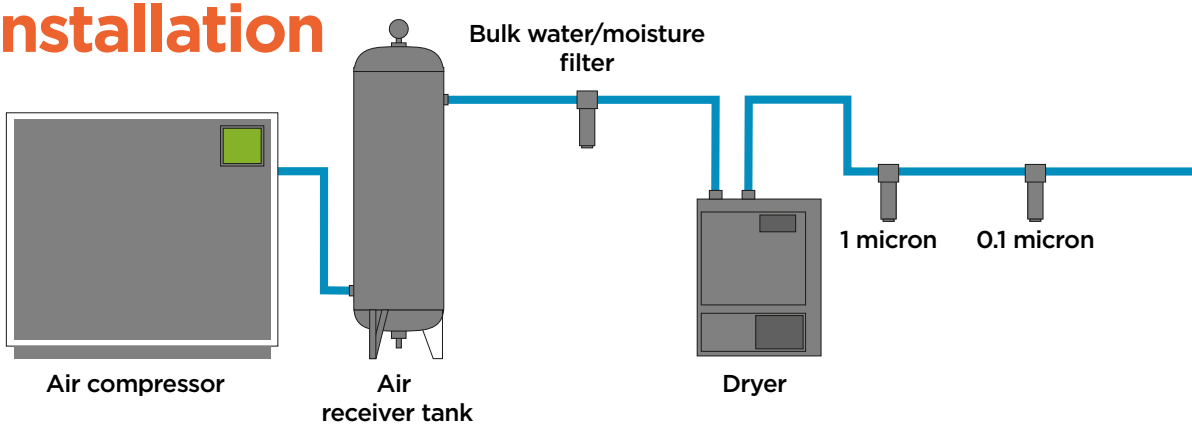


High purity nitrogen

Our CMS banks are packed using a 'snowstorm' filling technique, allowing for around 18% more carbon to be compacted into each column. This ensures performance is always optimized & precise, allowing the i-Flow range to deliver consistently high levels of nitrogen purity (up to 99.9995% or 5 ppm oxygen*). Furthermore, with our built-in PurityGuard™ gas monitoring & application safeguard system, along with integrated air filtration technology, we guarantee your application gas supply is never compromised & always of the highest quality.

*Over 100 flow-rate and purities available, depending on system design requirements and commissioned specifications.

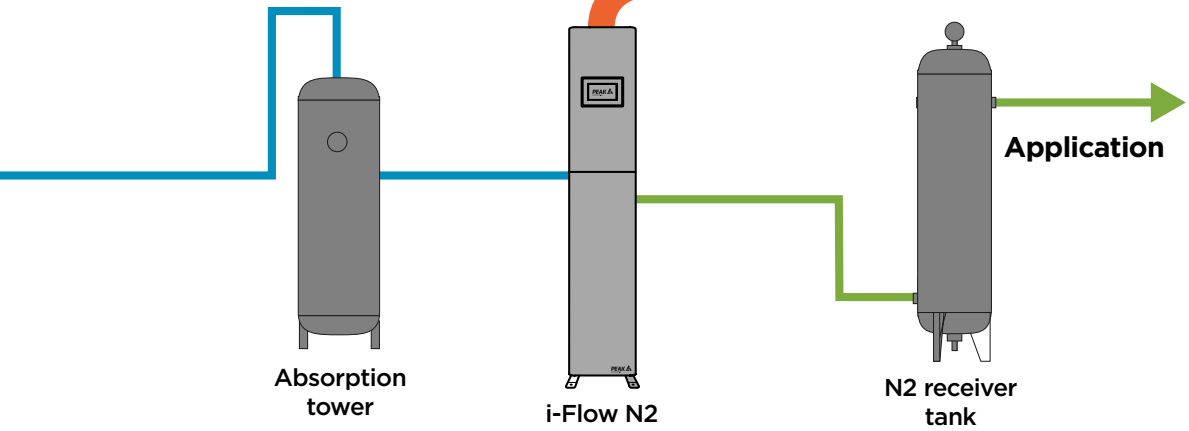
Typical **installation**



High flow-rates

i-Flow's highly robust PSA system generates nitrogen gas using simple principle methods. Compressed air is fed into the dual pressure CMS vessels and undergoes a cycle of compression & decompression, where oxygen is adsorbed and nitrogen is passed downstream. This not only delivers continuous nitrogen gas flow-rates on a large scale (0.85-285.08 m3/h / 30-10068 scfh), it also guards against abrasive breakdown, preventing gas supply contamination and ensures a CMS lifespan of up to 20 years.

*Over 100 flow-rate and purities available, depending on system design requirements and commissioned specifications.



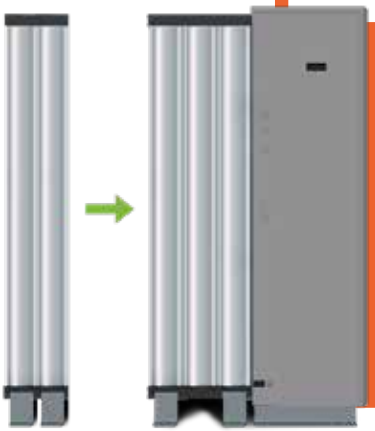
Adaptable, future-proof design

PEAK Gas Generation's nitrogen generation systems are designed to be a future-proof, space-saving and sustainable solution. To accommodate inevitable future growth and your expanding business needs, both i-Flow Prime & Mini gas generators can be scaled out retrospectively, with additional PEAK CMS banks or modular units. This offers companies the flexibility to incorporate a solution that can continually adapt infrastructure in line with growth, rather than being constrained by an increasingly expensive or fixed capacity nitrogen gas solution.

Modular

Multiple units can be synchronized to meet demands based on application flow-rates and purity requirements (more units = greater flow-rates at specified purity).

95 - 99.9995% purity, 0.85-285.08 m3/h (30-10068 scfh)



Scalable

Up to 4 & up to 10 CMS column banks can be added to the i-Flow Mini & Prime models respectively, increasing nitrogen production capacity with minimal downtime.

Consultative **design &** project **management**

Alongside technological innovation and expertise, PEAK also provide an industry-leading, wrap around consultative system design and project management service. PEAK Gas Generation's highly trained and dedicated specialists are experts at designing turnkey solutions that perfectly meet current and future business needs.

Our project teams professionally manage each step of the process, including:

- Consultation
- System design
- Procurement
- Installation and Commissioning Solutions
- Ongoing commitment to global and local technical support partners

Coupled with PEAK's world-class aftercare service and an ongoing commitment to a global & local technical support, ensures customers experience minimum downtime in the unlikely event of breakdown, with engineers capable of being on-site in under 72 hours.

Where a company prefers to utilize its own engineering and maintenance personnel, PEAK offers in-depth systems training to ensure staff are fully equipped to manage day to day maintenance and servicing.

Industry **applications**

Nitrogen gas is naturally clean, dry, inert and non-conductive. It is the most commonly used and cost effective solution to a whole host of industrial manufacturing and processing challenges. Below are just some examples of industry applications where PEAK Gas Generation's nitrogen generation solutions can help a company maximize its efficiencies and product quality, as well as increase profitability.

Electronics assembly & dry-box storage

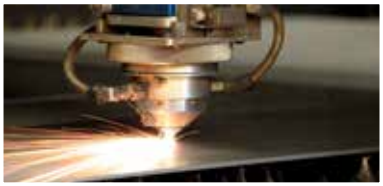
Oxygen contamination can impact on product quality and the efficiency of reflow, selective & wave soldering processes, causing production defects, such as bridging or insufficient wetting. Nitrogen gas helps create inert atmospheres in assembly environments, ultimately increasing first-pass yields by minimizing reworking requirements.

Food packaging & storage

Oxidation of perishable foods impacts on product quality and suitability for consumption. Nitrogen gas is used for modified atmosphere packaging (MAP), form filling and inert food storage. These help extend shelf-life, minimize the need for chemical preservatives, prevent packaging collapse and increase reach of product distribution.

Pharmaceuticals & biotechnology

Exposure to oxygen & moisture causes contamination, which can alter product composition, potentially rendering them useless or even make consumption harmful. Nitrogen gas is used throughout the manufacturing process for blanketing, inerting processing chambers (e.g. during milling or spray drying) and even to sterilize packaging prior to product filling.



Laser cutting & welding

Material exposure to moisture or oxygen can impact on the quality and structural integrity of end products. Nitrogen gas is used as an assist, purge and shielding gas, ultimately helping to ensure better quality cuts or welds and prevent against product discoloration due to oxide formation.

Technical **specifications - Prime**

Flow Rates M³/h (scfh)*											
Product Name		Prime 701X	Prime 702X	Prime 703X	Prime 704X	Prime 705X	Prime 706X	Prime 707X	Prime 708X	Prime 709X	Prime 710X
N2 Purity	**O2 Content**	i-Flow 7XX3									
99.9995%	5ppm	2.66 (94)	5.50 (194)	8.43 (298)	10.03 (354)	12.16 (429)	15.35 (542)	17.66 (624)	19.96 (705)	22.00 (777)	24.67 (871)
99.999%	10ppm	3.55 (125)	7.10 (251)	10.65 (376)	13.31 (470)	16.15 (570)	20.41 (721)	23.51 (830)	26.62 (940)	29.28 (1034)	32.83 (1159)
99.995%	50ppm	5.15 (182)	10.29 (363)	15.44 (545)	20.41 (721)	25.29 (893)	30.61 (1081)	35.49 (1253)	40.37 (1426)	45.25 (1598)	50.13 (1770)
99.99%	100ppm	5.77 (204)	11.53 (407)	17.30 (611)	23.07 (815)	28.84 (1018)	34.60 (1222)	40.37 (1426)	46.14 (1629)	51.91 (1833)	57.14 (2018)
N2 Purity	**O2 Content**	i-Flow 7XX2									
99.95%	500ppm	7.90 (279)	15.79 (558)	23.69 (837)	31.59 (1116)	39.48 (1394)	47.38 (1673)	55.28 (1952)	63.17 (2231)	71.07 (2510)	78.97 (2789)
99.9%	1000ppm	9.32 (329)	18.19 (642)	27.06 (956)	36.02 (1272)	45.07 (1592)	53.24 (1880)	62.11 (2194)	70.54 (2491)	78.97 (2789)	87.75 (3099)
N2 Purity	**O2 Content**	i-Flow 7XX1									
99.5%	0.5%	13.75 (486)	27.06 (956)	39.93 (1410)	51.91 (1833)	64.77 (2288)	77.55 (2739)	90.06 (3181)	102.92 (3635)	108.94 (3847)	121.51 (4291)
99%	1%	16.86 (595)	33.72 (1191)	47.03 (1661)	64.33 (2272)	78.52 (2773)	94.23 (3328)	109.84 (3879)	118.57 (4188)	145.09 (5124)	161.13 (5691)
98%	2%	21.74 (768)	43.48 (1535)	59.00 (2084)	74.97 (2684)	94.49 (3337)	113.57 (4011)	124.02 (4380)	141.20 (4987)	157.96 (5579)	175.14 (6185)
97%	3%	27.06 (956)	51.28 (1811)	71.87 (2538)	90.95 (3212)	113.39 (4005)	131.90 (4658)	152.09 (5372)	173.04 (6111)	195.25 (6896)	216.20 (7636)
96%	4%	32.12 (1134)	57.76 (2040)	81.19 (2867)	98.93 (3494)	118.99 (4203)	142.79 (5043)	166.59 (5884)	190.39 (6724)	214.19 (7565)	237.99 (8405)
95%	5%	35.67 (1260)	66.55 (2350)	97.60 (3447)	116.06 (4099)	138.18 (4880)	171.37 (6052)	207.65 (7334)	232.79 (8222)	255.16 (9012)	285.08 (10068)
Width mm (inch)		418 (16.5)									
Height mm (inch)		1953 (76.9)									
Depth mm (inch)		730 (28.7)	892 (35.1)	1054 (41.5)	1216 (47.9)	1378 (54.3)	1540 (60.6)	1702 (67)	1864 (73.4)	2026 (79.8)	2188 (86.1)
Weight kg (lbs)		183 (403)	268 (590)	353 (777)	438 (964)	523 (1151)	608 (1338)	693 (1525)	778 (1712)	863 (1899)	948 (2086)
Shipping weight kg (lbs)		245 (539)	330 (726)	425 (935)	510 (1122)	655 (1441)	740 (1628)	825 (1815)	930 (2046)	1015 (2233)	1110 (2442)
Noise Level		80 @ 1m									

*Performance data is based on a stable 10 bar(g) inlet pressure & 20-25 deg C ambient temperature. (Flow reference conditions, 20 deg C, 1013 millibar (a), 0% Relative Humidity)

Technical **specifications - Mini**

		Flow Rates M³/h (scfh)*			
Product Name		Mini 701X	Mini 702X	Mini 703X	Mini 704X
N2 Purity	**O2 Content**	i-Flow 7XX3-M			
99.9995%	5ppm	0.85 (30)	1.65 (58)	2.47 (87)	3.30 (117)
99.999%	10ppm	1.12 (40)	2.25 (79)	3.37 (119)	4.27 (151)
99.995%	50ppm	1.65 (58)	3.22 (114)	4.72 (167)	6.07 (215)
99.99%	100ppm	1.85 (65)	3.64 (129)	5.33 (188)	7.02 (248)
N2 Purity	**O2 Content**	i-Flow 7XX2-M			
99.95%	500ppm	2.54 (90)	5.13 (181)	7.36 (260)	9.79 (346)
99.9%	1000ppm	2.99 (106)	5.84 (206)	8.69 (307)	11.56 (408)
N2 Purity	**O2 Content**	i-Flow 7XX1-M			
99.5%	0.5%	4.42 (156)	8.69 (307)	12.82 (453)	16.66 (589)
99%	1%	5.41 (191)	10.82 (382)	15.10 (533)	20.38 (720)
98%	2%	6.98 (246)	13.84 (489)	19.57 (691)	24.64 (870)
97%	3%	8.69 (307)	16.46 (581)	23.07 (815)	29.20 (1031)
96%	4%	10.31 (364)	18.54 (655)	26.06 (920)	31.76 (1122)
95%	5%	11.45 (404)	21.36 (754)	31.33 (1107)	39.45 (1393)
Width mm (inch)		418 (16.5)			
Height mm (inch)		853 (33.6)			
Depth mm (inch)		830 (32.7)	992 (39.1)	1154 (45.4)	1316 (51.8)
Weight kg (lbs)		98 (215)	138 (304)	179 (393)	219 (482)
Shipping weight kg (lbs)		144 (317)	184 (405)	240 (528)	280 (616)
Noise Level		59dBa @ 1m			

*Performance data is based on a stable 10 bar(g) inlet pressure & 20-25 deg C ambient temperature. (Flow reference conditions, 20 deg C, 1013 millibar (a), 0% Relative Humidity)

Contact us today to discover more!

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