



Expert on-site N₂ solutions for laser cutting

Just as laser cutting is essential to many industrial processes, nitrogen (N₂) is essential to laser cutting, where it primarily serves as an assist gas. Nitrogen is used to blow away the molten metal at the point where the laser melts it. Thanks to its high purity and inert properties, N₂ leaves the metal with a clean finish. In addition, nitrogen can be used in other processes such as purging the cutting head of the laser.



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Relying on extreme heat, the laser melts the metal, which allows it to cut through the material. Nitrogen is then used to blow away this molten material. As an inert gas, N₂ keeps oxygen away from the cutting area and therefore ensures a clean finish.

N₂ requirements for laser cutting

Laser cutting comes with a very specific set of nitrogen requirements:



- **Optimal flow:** Laser cutting can require a lot of nitrogen, depending on the thickness and type of metal. The right solution is able to handle that flow and fluctuations in demand.
- **High purity:** Depending on the desired finish and on the metal that has to be cut, a reliably high purity of 99.999% may be required.
- **High air and nitrogen quality:** Laser cutting demands high-quality N₂, as contaminants can affect the laser and the final product.
- **Reliability:** Laser cutting can be fully automated and take place 24/7. That means a reliable supply of nitrogen must be available at any time.
- **Cost savings:** Because laser cutting requires a lot of nitrogen, keeping N₂ costs down is crucial to lowering operating costs.
- **Sustainable production:** Sustainability has become a key condition that nitrogen solutions must also meet.

On-site nitrogen generation – the preferred solution

Many laser cutting operations still purchase their nitrogen – even though generating N₂ on-site offers more advantages.



Greater cost-efficiency saves you money



Eliminating bottle or liquid deliveries reduces your environmental footprint



Take charge of your own nitrogen supply



Less hassle by removing supply logistics



Take laser cutting to the next level with the PPNG HE

The PPNG HE is Pneumatech's premium PSA nitrogen generator, giving laser cutting operations the high-purity nitrogen they need with superior reliability and cost-savings:

- **The right nitrogen:** The PPNG HE produces N₂ with a guaranteed purity of up to 99.999%. Zirconia sensors provide reliable purity measurement.
- **Cost savings:** Thanks to an innovative PSA cycle and high-quality CMS, the PPNG HE offers best-in-class efficiency to keep energy use and costs to a minimum. The Variable Flow Saver algorithm ensures up to 40% additional energy savings at low load.
- **Sustainability:** Producing N₂ on-site eliminates delivery transportation emissions. The PPNG HE's energy efficiency also contributes to a greener production.
- **Long lifetime:** Thanks to its robust build and a host of protective features, the PPNG HE has a long lifetime.
- **Advanced monitoring and control:** The Purelogic™ Controller checks feed air and nitrogen quality. It also offers optional 24/7 ICONS remote monitoring of flow, pressure, purity and all other key data in real time.



The all-in-one solution

A pressure of up to 30 Barg is often required for the laser cutter, which means both a regular and a booster compressor will be necessary. Pneumatech offers the PPNG HE as part of an all-in-one nitrogen skid that also includes a VSD compressor, a high-pressure booster, and all necessary air and nitrogen storage and treatment. With a PPNG HE skid, you don't need to specify, integrate, and commission all these separate components. Instead, you get a complete plug-and-play system with just one power supply and one nitrogen connection to manage.

More than just a superior product

Pneumatech offers more than “just” the best nitrogen generator on the market. We can also provide top-quality compressed air dryers and filters to ensure the quality of your compressed air and N₂.

Expert advice and support

Contact us with the details about your application and its requirements, such as your nitrogen usage or the size of generator you need. Our experts will put together the best on-site solution for you. If you don't have that information or need help, they are ready to help you through the specification process.

