



Expert on-site N₂ solutions for PCB soldering

Printed circuit boards (PCBs) are essential in electrical assembly. The electrical devices we use every day, from cell phones to computers and televisions, cannot operate without them. The production of these PCBs requires soldering. Which is where nitrogen comes in. It creates an inert atmosphere to avoid oxygen reacting with the solder and creating an oxide layer that can lead to quality problems.



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In PCB soldering, a conductive material is melted to connect electrical components, such as capacitors, LEDs, transistors, etc., to the circuit board. Because of its inert nature, nitrogen is used in all types of soldering to ensure the process is free from oxygen. In selective soldering, nitrogen keeps the soldering pot(s) inert. Wave and reflow soldering rely on nitrogen to inert the complete chamber.

N₂ requirements of PCB soldering

PCBs require precision manufacturing which comes with specific N₂ requirements:

- **Reliability:** Without N₂, PCB production (often fully automated and 24/7) stops. That means its nitrogen supply must be absolutely reliable.
- **Flexible flow:** The nitrogen flow in selective soldering is stable. Reflow soldering uses much more nitrogen during start-up. PCB nitrogen systems must be able to meet the needs of all soldering processes, including peak demand.
- **The right purity:** Selective soldering can require a very high nitrogen purity, whereas wave soldering can work with a lower purity. The ideal PCB soldering N₂ solution can meet all these standards without unnecessarily overspecifying.
- **High nitrogen quality:** PCBs are delicate pieces of equipment. Any contamination of the nitrogen with dust particles or oil vapors could damage them, which makes high N₂ quality a key requirement.
- **Cost savings:** The cost of using nitrogen adds up. Keeping N₂ expenses down is crucial to lowering operating costs.
- **Sustainable production:** Sustainability has become a top operational priority that nitrogen solutions must also meet.

On-site nitrogen generation – the preferred solution

Many PCB manufacturing facilities still purchase their nitrogen – even though generating your 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 your PCB soldering to the next level with the PPNG HE:

The PPNG HE is Pneumatech's premium PSA nitrogen generator, giving PCB production facilities top nitrogen purity and quality, reliability, and cost savings:

- **Flexible flow:** The PPNG HE can produce a stable flow for selective soldering but also meet the peak demand of reflow soldering.
- **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.
- **High purity:** The PPNG HE produces the nitrogen purity, up to 99.999% if needed, specific soldering processes demand.
- **Advanced monitoring and control:** The Purelogic™ controller checks feed air and nitrogen quality. It also provides optional 24/7 real time remote monitoring of flow, pressure, purity and all other key data.
- **Long lifetime:** Thanks to its protective features, the PPNG HE offers a long lifetime of reliable operation. Its CMS will last at least 15 years at full load.
- **Sustainability:** Producing N₂ on-site eliminates delivery transportation emissions. The PPNG HE's energy savings also contribute to meeting your energy efficiency goals.

More than just a superior product

Pneumatech offers you more than “just” the best nitrogen generator on the market. We can also provide oxygen generators and all your air and gas treatment equipment.

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.