



			He
	O	F	Ne
	Oxygen	Fluorine	Neon
P	S	Cl	Ar
Phosphorus	Sulfur	Chlorine	Argon
AS	Se	Br	Kr
Arsenic	Selenium	Bromine	Kryptonite
Sb	Te	I	Xe
Antimon	Tellurium	Iodine	Xenon



**SPECIAL EDITION**

# NITROSource NEWS

## 2 EDINBURGH FEBRUARY 2020



This issue of NITROSource News focuses on the Parker distribution conference in Edinburgh, containing articles that will be helpful in considering applications for the new NITROSource Compact range, launching at the conference. As well as details of some local installations in Scotland and Northern England.

Parker's distribution partners are essential to our continued growth and success. The distribution conference held each year is arranged to celebrate this success and recognise the efforts and achievements of all involved, as well as presenting an opportunity to share knowledge and experiences.

Here's to an inciteful and rewarding conference, thank you for your continued support!

## NITROSource Compact – The perfect partner for selective soldering

Selective soldering is a process where individual or groups of THT, "through hole technology", components are "selectively soldered" onto the underside of printed circuit boards that have SMD, "surface mount components", on the top side.

For this type of operation "wave soldering" the whole board is not possible because the heat involved might dislodge or spoil the joints for the SMDs. The only alternative would be to use labour intensive hand soldering.

Most soldering operations now use "lead free" silver and tin based alloys that have a higher melting point and are more susceptible to oxidation. As a result, many soldering applications now use nitrogen gas to provide an inert blanket during the process.

Selective soldering machines use a relatively low flow of nitrogen gas, but generally at maximum remaining oxygen content levels

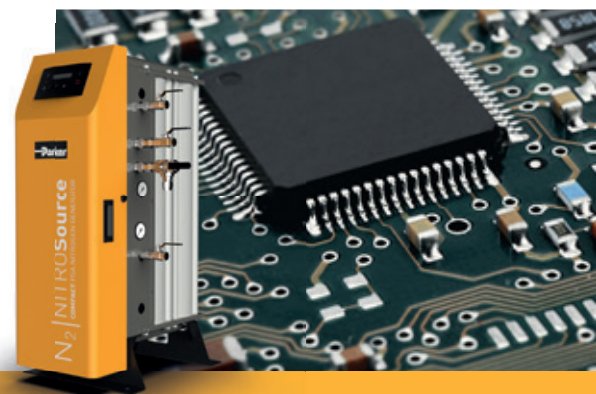
in the region of 100 ppm to 10 ppm, ideal for the MIDIGAS, and now the new NITROSource Compact.

There are many manufacturers of selective soldering machines but so far there appears to be a resistance for them to specify any particular method of nitrogen gas supply for their equipment, leaving this to the end user to provide at a designated specification.

This often creates a problem for sales of nitrogen generation equipment because by the time the soldering machine has been specified and ordered, most end users then believe their only option is to decide what gas company to select for their nitrogen supply. Often, gas generation and more importantly, Parker's distributors are not even considered.

In the UK, Tony Brown, Sales Manager Nitrogen Generators, devised a strategy to overcome this and grow Parker nitrogen generation sales into this market sector.

We can't name the distributor or machine manufacturer at present, for non-disclosure agreement reasons, but the strategy generically outlined here refers to actual events.

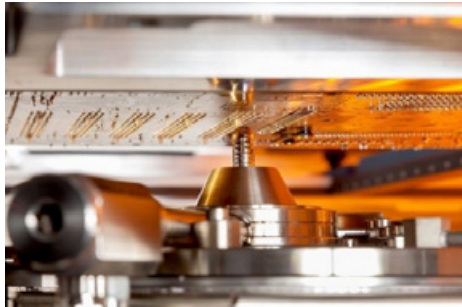


# NITROSOURCE NEWS

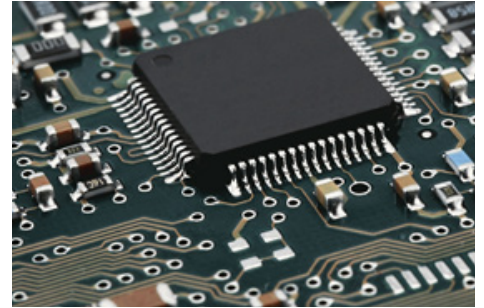
## EDINBURGH 2020



Through Hole Technology



Selective soldering nozzle



SMD Technology

### Tony explains further –

*“During routine business visits to discuss nitrogen problems with selective soldering machine end users; I discovered a leading UK distributor for selective soldering machines had several installations of their equipment utilising a competitor’s nitrogen generator.*

*It became apparent very quickly that the competitor’s nitrogen equipment was incorrectly specified, causing oxidation of the solder and under-flow issues.*

*Parker UK were able to offer a solution that did work, fully understanding the correct specification for the selective soldering applications in question.*

*This led me to the conclusion that a meeting with the soldering machine distributor would be useful to try and secure business for Parker, whilst keeping their customers happy.*

*During the meeting, their sales manager told me, that their aim was to provide the lowest operating cost to the end user whilst making it easy for their installation engineers to connect the soldering machines to the facilities. Nitrogen generation ‘ticked those boxes’ but was beginning to cause more problems than it solved.*

*What’s more, they just recommend the nitrogen package as they didn’t want to become involved in its purchase, supply, installation or upkeep.*

*Discussing the application further I managed to convince their team that we were knowledgeable, successful and experienced in this application and to let Parker work on the next system they were quoting, before they finally dropped the idea of recommending nitrogen generation.*

*Subsequently, the next selective soldering machine quoted, they recommended Parker to investigate*

*the nitrogen generation equipment. I worked with our approved local distribution partner and they quoted the whole nitrogen generation package including compressor, winning the order.*

*The nitrogen system has worked flawlessly since commissioning, saving the end user £1000s and displacing the competitor from the soldering machine distributor’s referral process.*

*Since then they have recommended Parker on 8 occasions with 3 systems being installed to date and the remaining proposals expected to result in sales once the selective soldering machines have been ordered.*

### **This is really a “win” on 4 levels!**

- 1. The soldering machine distributor wins because they have the correct nitrogen supply for their soldering machines, making installation easier. They are held in high regard by their customers for saving them a lot of money, supporting their reputation as a market leader.*
- 2. Parker win because they are recommended by the soldering machine distributor and that makes NITROSource the preferred choice with a higher sales success rate.*
- 3. Parker’s distribution channel win because they are presented with a qualified lead on recommendation too, saving time prospecting and with a much higher chance of closure. Often with a compressor sale and service package included*
- 4. The end user wins because they have the lowest cost nitrogen and maximum up-time of their soldering equipment with exactly the right flow and purity of gas on demand. Because the product is recommended by the soldering machine manufacturer, it removes the risk factor”.*

Tony also comments – *“Selective soldering machines generally operate with a MIDIGAS6 if it is a single solder pot unit or an N2-20P if it is a twin solder pot.*

*The new NITROSource Compact flow rates at ppm levels are very good news. Our distributors can be even more competitive, and the N2C-8 model fills the gap nicely between the old MIDIGAS6 and N2-20P”*

Is this a strategy you could use within your country? Who are the soldering machine distribution channels? What are their “pains” and how do they currently advise end users for their nitrogen supply?



N2-20P for twin pot soldering machine. Installed nicely in small space to side of factory.

## Gin and water

### NITROSource providing a welcome “tonic” for two end users

#### John Dewars - Gin

Gin is a very fashionable and popular drink today and there are many brands available from the big producers to small craft distilleries.

Gin uses a base of grain neutral spirit (GNS), that is then distilled and infused with botanicals to provide the flavour. The main botanical used is the juniper berry and from there many different plants, berries, peels and barks are used and blended to create unique tastes.

When the gin is distilled, it is generally double strength before being diluted to approximately 40% proof for bottling. This means it is also extremely flammable.

To ensure a consistent quality and taste of each batch of gin, the product is “roused” regularly to ensure an even distribution of the botanical flavours throughout the storage vessels.

The ideal method to rouse the gin is to use nitrogen gas. This is because if a mechanical stirring device with electric motor was utilised, then there could be the potential for sparks and that in combination with flammable alcohol and vapours creates a serious risk of fire or explosion. Compressed air could be used but the oxygen content could react with the delicate and complex flavouring processes causing undesirable tastes.



To rouse the tanks a big bubble of nitrogen is used that can be 2-3 metres diameter. As this moves upwards from the bottom of the rousing tank, it agitates and stirs the gin to produce a completely homogenous mix of spirit and flavours.

One of the world’s most famous brands of gin is, Bombay Sapphire, now owned by the Bacardi Group.

John Dewar & Sons based in Glasgow are more renowned for their whisky but being also part of the Bacardi Group, produce some of the Bombay Sapphire product at this site.

To produce the nitrogen gas required for the rousing process, Parker’s distributor, MBAS, won the order to provide a containerised nitrogen generation system using NITROSource PSA.

#### Eden Valley Water

Princes soft drinks, Eden Valley mineral water factory based in Armathwaite, Cumbria, has been using Parker nitrogen generators for many years.

Two MAXIGAS116 units were originally installed over 10 years ago to provide an inert gas blanket in the head space of mineral water bottles. The purpose of this nitrogen blanket is to remove the possibility of oxygen permeation (if air was used), through the plastic material, causing the bottles to lose their rigidity and collapse.

The Eden Valley site draws natural mineral water from what is believed to be one of Europe’s largest aquifers. The purity of the accredited natural mineral water sources is protected because the site is set in an EU Special Area of Conservation. As well as producing the Aqua Pura brand natural mineral water, Eden Valley produces a wide range of customer own brand water.

Originally the nitrogen generators were specified as 5% MROC units because the gas was considered a processing aid to prevent bottle collapse rather than an additive to prevent degradation of the water as in modified atmosphere packaging; therefore, a defined purity specification was not required under EU law.

Princes previously had many years faultless operation from the MAXIGAS units and saved many £1000s each year compared to using liquid nitrogen. When the time approached to consider retiring the MAXIGAS units and upgrading, NITROSource was the obvious choice but still had to stand its ground against some of the usual suspects by way of competition.

Parker’s distributor Maziak was employed to replace the MAXIGAS units with new NITROSource N2-75P and at the same time took the opportunity to increase the purity specification in-line with EC 231/2012 to eliminate any ambiguity as to the application description.



# NITROSOURCE NEWS

EDINBURGH 2020

## Just how low can you go?

When considering the majority of Parker NITROSource installations, most would agree that the generators exceed their specified purity and flow parameters by a considerable margin once operational on site.

The oxygen analyser used within the NITROSource range is a fast responding and accurate device with excellent repeatability and stability, however it does have limitations. When trying to measure below the highest purity variant to levels of just a few ppm, there is so little oxygen to measure that the resolution may not be so accurate.

John Daly of Dalco Nitrogen System based in County Meath, Eire, recently won an order for a NITROSource based centralised nitrogen system used for analytical laboratory instruments.

To confirm the purity on commissioning, as many installers do, John used an independent calibrated analyser to double check the oxygen content of the gas.

The gas analyser was provided by our partner, N-Tron to Dalco, and is designed with two analysers housed within a rugged transportable case, to measure both % and PPM purity levels. However, N-Tron have incorporated a new electrochemical cell technology in the new analyser, that can read accurately below 1ppm.

To John's astonishment the NITROSource originally specified at 5ppm was operating stably at 0.3ppm at full flow!



## University of St. Andrews – School of Physics and Astronomy

**The University of St Andrews is Scotland's first university and the third oldest in the English speaking world. Its School of Physics and Astronomy is one of the UK's leading physics departments with an internationally recognised portfolio of research programmes.**

The school's experimental methods include LC-MS, an analytical technique that combines liquid chromatography with mass spectrometry, to identify complex chemical samples that are traditionally difficult to resolve - often with very low detection limits. Due to the sensitivity of the LC-MS instrument, it is essential that the supplied nitrogen is available on-demand and at a consistent gas purity, to ensure the accuracy and integrity of results. The school's traditional, high-pressure bottled nitrogen was not providing this, being expensive, difficult to manage and prone to inconsistent gas quality.

Parker's distributor PCA Ltd. based in Shotts, near Glasgow, carried out in-depth analysis of the nitrogen requirement which allowed them and Parker to understand the customer's strategy, requirements and objectives. Subsequently, a NITROSource nitrogen generation package was proposed. The complete solution, featuring advanced, Energy Saving Technology, enabled the university to take control of their nitrogen gas costs as well as meeting key performance parameter improvements.

The gas quality produced by the nitrogen generation system has exceeded all expectations, providing consistently accurate and reliable results with an expected return on investment within 12 months.

The department predicts anticipated annual savings of more than 70%, delivering huge savings for future generations of physicists and researchers.



### Brochure updated

Food and beverage grade nitrogen made simple

The Parker IGG food brochure is one of the top 10 downloaded

documents on [parker.com](http://parker.com). A revised version of this brochure is now available, with the NITROSource and NITROSource Compact included and obsolete models removed, bringing it up to-date with current messaging and content. We hope you find it useful in supporting you in food grade nitrogen promotional activities and sales opportunities. [Download it here](#)



## Thanks for reading and thanks to those that have contributed article details for this edition

If you have an application to share, please let me know and I will help develop an article. I just need the basic information and I can then work with you to expand upon the detail.

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Low headroom installation – not a problem for NITROSource.

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