

FROSTCRUISE®



FROSTCRUISE. The latest technological innovation in refrigerated transport brought to you by BOC.

- Reduce your carbon footprint to zero
- Lower your global warming potential to zero
- Run your vehicles for 12 years rather than 7
- Maximise your uptime and lower your costs with minimal maintenance

What is FROSTCRUISE?

FROSTCRUISE is an environmentally friendly alternative to diesel powered truck refrigeration systems. Rather than using fluorinated refrigerant gases, FROSTCRUISE harnesses the cryogenic power of liquid nitrogen, removing the need for a diesel driven unit.

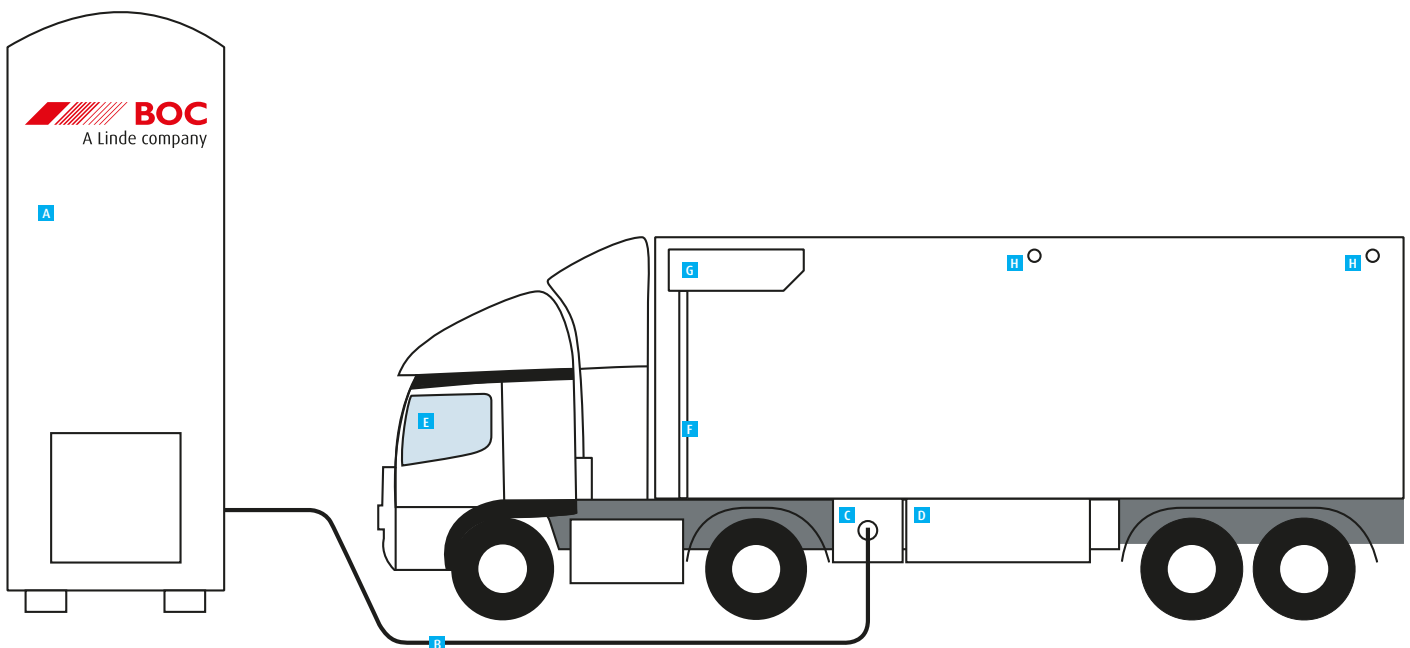
Nitrogen makes up 78% of the air we breathe. In our specialist plants, BOC liquefies and distils air into its component parts at cryogenic temperatures to give us nitrogen in its liquid state. In this form, it is stored at a temperature of -196°C making it ideal for rapid cooling of the FROSTCRUISE system.

How does it work?

Liquid nitrogen is stored in an on-board insulated tank, from which the liquid nitrogen can be drawn off. At this point, similarly to a fluorinated gas system the it is passed through a heat exchanger.

The heat energy within the cargo area is used to expand the nitrogen inside the heat exchanger and is thereby removed from the cargo as the spent N₂ is exhausted safely to atmosphere. This creates a totally safe system with no risk of nitrogen entering the compartment, instead being vented harmlessly back to the atmosphere.

Liquid nitrogen is dispensed just as you would diesel, via a specialist filling system that is connected to a BOC storage tank.



A On-site LIN tank, **B** On-site LIN hose, **C** Control and filling box (valve cabinet), **D** LIN tank, **E** On-board control unit, **F** Piping, **G** Heat exchanger, **H** Sensors



No carbon footprint, no NOx, no particulates

It's simple – no diesel power required, no carbon footprint or harmful emissions from your refrigeration unit.

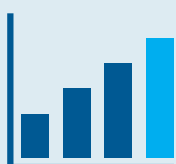
- Helping you to meet your carbon reduction targets
- Engage with a greener company image
- Low emission zones? No problem with FROSTCRUISE



1730 GWP for R410A? How about zero GWP for nitrogen

R410A is the most environmentally friendly refrigerant commonly used today, but even this will be phased after 2020.

- Future proof your business by using nitrogen
- Remove compliance headaches with continually changing legislation



3 times faster pull down and recovery time

Fast pull down times and stability in transit and exceptional recovery time.

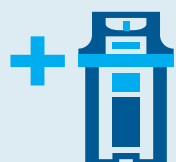
- Maintain cold chain integrity for your customers peace of mind
- Minimise rejected loads



Quieter than a conversation

Noise pollution in urban areas is a serious concern for many but not with FROSTCRUISE which has received a Piek award for operating at 56dBA.

- Flexibility for urban delivery schedules
- Accommodate your customers with out of hours deliveries



More than twice the life

The simple but advanced technology of FROSTCRUISE assures an asset life of at least 12 years.

- More time on the road
- Improve your return on investment



Maximise your uptime

Highly advanced design results in technology that requires minimal repair and maintenance.

- Lower your maintenance costs
- More time on the road doing what you do best



Service and repair

Full maintenance and service offer available nationwide.

Visit boconline.co.uk/frostcruise to find out more.

BOC – turning ideas into solutions

BOC is a member of The Linde Group, the leading global gases and engineering company. BOC is the UK's largest provider of industrial, specialist and medical gases, as well as related products and services. As a leader in the application of technology, we are constantly looking for new ways to provide our customers with high quality products and innovative solutions.

At BOC we help our customers to create added value, clearly discernible competitive advantage and hence greater profitability. To achieve this we have a comprehensive range of products, services and technical support, which can be customised to meet the individual requirements of our clients.

To keep ahead of the competition in today's market, you need a partner for whom quality, service, process and productivity optimisation are an integral part of customer support. We are there for you and with you, helping to build your success.

BOC's reputation has been forged through partnerships – with customers, with relevant regulatory authorities and with key suppliers. In this way, we deliver comprehensive and consistent benefits to you.

BOC – world-leading knowledge and resources adapted to local requirements.

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