

# BOC supporting orthopaedic manufacturing

## Case study

### Business benefits

- Supporting Plasma spray developments
- World class Helium supply
- Supporting UK Healthcare innovation

A renowned UK implant manufacturer and global leader within the orthopaedics market, specialises in the research, development and manufacture of hip, knees, shoulders and elbow implants. With over thirty years' experience, the organisation's core objectives are to develop innovative products which provide patients with an improved, longer quality of life for the Healthcare market.

Manufactured within their UK production site, the organisation's range of orthopaedic implants are required to be coated with hydroxyapatite before distributed into the Healthcare market. Hydroxyapatite is a naturally occurring mineral form of calcium apatite. Coating implants with Hydroxyapatite enables each implant to rapidly integrate into the human body, while at the same time the body is none the wiser to the implementation of a foreign object.

Plasma spraying processes are commonly used in medical device manufacturing coating processes and are the only commercially accepted methods for delivering hydroxyapatite coatings.



## Supplying Medical Device manufacturers with BOC world class gas for a Plasma spray process

The Global implant manufacturer contracted BOC to review, design and install the implant plasma coating process which incorporated the supply of Helium to act as the process gas and Nitrogen for the carrier gas. BOC delivered and installed a 200 liquid litre CRYOSPEED® vessel to deliver the Nitrogen to the coating process source, along with the Helium being delivered via cylinders.

BOC is the largest provider of industrial, medical and specialist gases in the UK and Ireland.

As a member of the Linde Group, a world leading gases and engineering company, BOC combines over 120 years of gas supply expertise with Linde's global capability in optimising high value manufacturing processes, providing an outstanding portfolio of products and services.

BOC has access to 25% of the world's commercially available Helium, ensuring HAV security of supply and peace of mind. Through investment in a UK helium transfill facility, BOC has more cylinders, liquid dewars, bulk tube trailers and people dedicated to its Helium business than any other supplier in the UK.

BOC guarantees purity and traceability of gases and gas mixtures and demonstrates mandatory compliance and validated quality assurance verified by ISO 9001 and ISO 17525 accreditation.

BOC have a network of experienced and highly skilled technical engineers supporting customers in a wide variety of issues, from implementation of new application technology to improve production efficiencies through to improving customer welding and gas-using processes. Mark Cole, Technical Support Specialist; and who has a doctorate through the university of Surrey (2004) in high temperature erosion properties of yttria stabilised Zirconia thermal barrier coatings using HVOF process with acetylene, worked with the manufacturer to provide the technical advice, design and installation of the vessel required for the coating process. Mark concluded "This was a great opportunity to work with a customer to develop their process, to improve the outcomes of orthopaedic patients."

Mark Cole,  
Technical Support Specialist within  
BOC and expert within thermal spray  
processes concluded

"This was a great opportunity to work with a customer to develop their process in order to improve the outcome for orthopaedic patients."



BOC

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