The LENS 500 Hybrid Controlled Atmosphere System sets a new standard in affordability and performance for titanium and aluminum metal additive manufacturing applications. The system incorporates an Optomec proprietary hermetically sealed Class 1 enclosure and an integrated gas purification system that maintains oxygen and moisture levels to below 40 ppm.

Built on a rugged cast iron CNC platform, the system features high precision ball screws, spindle, and ATC for precision machining operations. Additive functionality is enabled with integrated Optomec LENS Print Engine technology including Steadyflow™ powder feeders, water-cooled LENS processing head, and SmartAM™ closed loop controls. A high power fiber laser and advanced Siemens controls complete the system. Powerful Optomec software enables multi-axis build strategies that combine additive and subtractive operations in a single tool path. Optional material starter recipes and unparalleled customer service and support round out the LENS 500 Hybrid Controlled Atmosphere System.

LENS® 500 HYBRID CONTROLLED ATMOSPHERE SYSTEM
Affordable Hybrid Machine for the Fabrication and Restoration of High Value Metal Components.

LENS® 500 HY CA FEATURES
- Full Atmosphere Control – superior metal quality
- Cast Iron CNC Platform – affordable rugged base
- Full CNC Machining Capability – finished parts in one set-up
- Full LENS Additive Capability – industry proven technology
- Up to 5 Axis Motion – for complex parts/repairs
- Fiber Laser – high performance/reliability
- Closed Loop Controls – part to part consistency
- Common materials: Inconel Alloys, Stainless Steels, Titanium alloys

LENS APPLICATIONS
- Hybrid Manufacturing
- Finished Functional Prototypes
- Repair damaged/worn parts
- Restore mis-machined components
- Remanufacturing of legacy parts

LENS 500 HY CA System. An additive only controlled atmosphere model, LENS 500 AM CA, is also available.
How the LENS Process works:

The LENS process is housed in a chamber which is purged with argon such that oxygen and moisture levels stay below 40 parts per million for LENS Hybrid CA Systems and 10 parts per million for LENS Additive CA Systems. This ensures there is no impurity pickup during deposition.

The LENS Deposition head delivers the laser and powder to the deposition zone. Metal powder is conveyed through nozzles to the focal point of the laser creating a melt pool. Argon gas is used to deliver the powder and protect the melt pool from contamination.

Toolpaths are generated from a CAD model and instruct the LENS system to build or machine the part using standard G & M commands. Material starter recipes provide pre-qualified LENS processing parameters to print a variety of commonly used powders including Titanium, Inconel, and Steels. The part is built layer by layer under the control of software that monitors a variety of parameters to ensure geometric and mechanical integrity. When complete, the part is removed and can be heat-treated, Hot-Isostatic Pressed, machined or finished in any other manner.

About Optomec

Optomec® is a privately-held, rapidly growing supplier of Additive Manufacturing systems. Optomec’s patented Aerosol Jet Systems for printed electronics and LENS 3D Printers for metal components are used by industry to reduce product cost and improve performance. Together, these unique printing solutions work with the broadest spectrum of functional materials, ranging from electronic inks to structural metals and even biological matter. Optomec has more than 300 marquee customers around the world, targeting production applications in the Electronics, Energy, Life Sciences and Aerospace industries. For more information about Optomec, visit http://www.optomec.com.