Laser Cladding

Nozzle Technology

Fraunhofer USA

Center for Coatings and Laser Applications

Fraunhofer COAX8 Nozzle for General Cladding, Repair & Remanufacturing

Fraunhofer COAX12 Nozzle for 3D Deposition

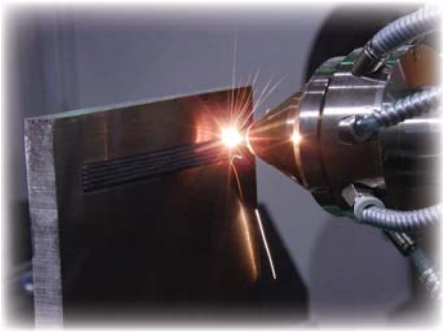
Fraunhofer COAXpowerline for super high deposition rates

Fraunhofer COAX13 Nozzle for difficult-to-access areas

Fraunhofer Cyclone Nozzle with XYZ positioning unit

COAX Series

The Powder is delivered coaxially and concentric to the laser beam. This allows multidirectional Cladding. Nozzle tips can be configured for fine deposition or for high deposition rates with large track widths.



Horizontal Laser Cladding Process with COAX12 Nozzle

Fraunhofer Laser Cladding Technology

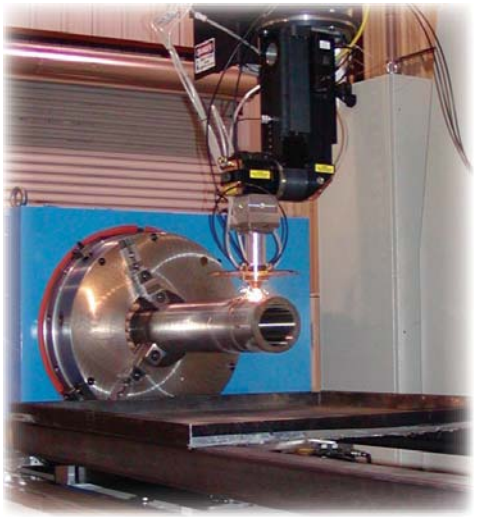
Through years of experience in laser cladding process development, Fraunhofer has developed laser cladding nozzles for a variety of applications. Basic configurations include coaxial powder feeding (COAX series) and side axis feeding nozzles (Cyclone nozzle). The nozzles are suitable for CO_2, fiber, disk, and diode lasers. Nozzles can be customized for each application.

Laser Cladding Process with Cyclone Nozzle (side-axis feed design)

Laser Cladding System Integration

Fraunhofer CCL Robotic Workcell for Laser Cladding

Fraunhofer offers its expertise in laser cladding and process equipment to perform system integration of turn-key pilot cladding systems. We can provide you with the latest in laser technology for a cost-effective solution for coating or repair of your components. Systems can be developed with CNC or robotic handling systems, and with CO_2 or fiber delivered lasers (diode, fiber or disk). With its systems Fraunhofer performs on-site training & support of your personnel, to help you master the process.



CNC Laser Cladding System for large Oil Drilling Components

Making innovation a reality

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