



HC-245

5 AXIS PRECISION ADDITIVE LASER SYSTEM



A Contour Precision Group Company

HC-245 5-AXIS LASER SYSTEM

The HC-245 is a precision 5 Axis Laser Powder Fusion (LPF) CLADDING and Laser Fusion Welding (LFW) JOINING for cladding a variety of Aero or IGT components. Our HC Series of lasers offer advanced machine tool design & construction backed by a 50 year history of innovation.

As a pioneer of LPF and LFW technology for nearly 3 decades we have gained the experience necessary to deliver solutions to the challenges of additive manufacturing.

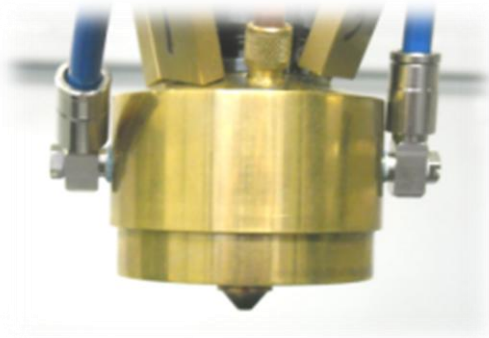
This technology offers a wide range of applications in the fields of metal cladding and welding. As a result, this omni-directional Laser process enables highly localized areas of a component to be built up with metallurgically bonded layers of hard metal alloys.

KEY FEATURES -

1. A robust machine designed for turbines and other parts requiring Precision Additive Manufacturing (PAM) in a production environment
 - Enhances process predictability for greater accuracy and through-put, takes the variables out of the machine.
2. Proprietary **AutoCLAD™** Laser Processing Software efficiently creates process parameters and enables simple “push-button” operation.
 - Saves time and money by virtually eliminating the guess work associated with precision cladding and welding processes.
3. Use of high efficiency Fiber Laser
 - Lower overall operating cost and maintenance
4. Ability to perform Powder laser deposition
 - Fewer restrictions in process approach for maximum efficiency .
5. A variety of Diffuser Nozzles are available to meet the specific requirements of the application.
 - “Breathable” Copper Diffuser improves cover gas efficiency for improved welding or cladding, providing <100 ppm Oxygen; a micro drilled diffuser is also available. Superb machine usability, safety and reduced operator fatigue
6. Excellent work area accessibility and Ergonomics



- ▼ Precision Rotary (A & C) Axes allows LPF Cladding of Blades and Blisks .



Powerful OA Control

Our Open Architecture Control with our Intuitive PCNC Graphical User Interface simplifies machine operation and set-up.

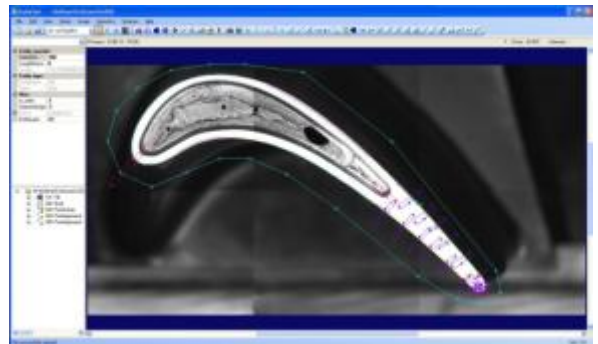
- ▼ Windows 7® Operating System
- ▼ Large 19" Touchscreen LCD Monitor
- ▼ 250 GB Hard Drive (min)
- ▼ Industrial PC with Core™ 2 Quad Processors
- ▼ Full QWERTY Keyboard & Optical Mouse



AutoCLAD™

Combines vision tools and CAD/CAM-like features to enable automatic creation of CNC programs on Huffman LPF welding systems. Integrated CAM functions designed for material "addition" rather than removal.

- ▼ Controls Laser Power
- ▼ Controls Weld Path Position
- ▼ Controls Powder Flow Parameters, Machine Motion and Feed Rate



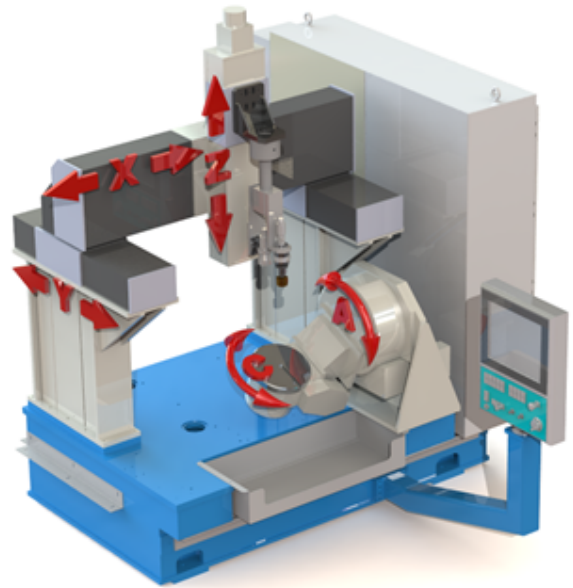
"restoration of worn surfaces on turbine components like blades, vanes, impellers, shrouds, seals and BLISKS or IBR's"

HC-245 Specifications

<u>Linear Axes</u>	X,Y,Z Axes	30 x 18" x 20"	762 x 457 x 508 mm
	Feed Rate	0393 ipm	0-10 m/min
	Resolution	0.00010"	0.001 mm
	Accuracy	± 0.0008" / ft	± 0.067 mm/m
	Repeatability	0.0008"	0.02 mm
<u>Rotary Axes</u>	A-Axis Rotation	±135°	0-3.3 rpm /1,200 deg/min
	C-Axis Rotation	Continuous	0 - 5.5 rpm /1980 deg/min
	Resolution		0.001°
	Accuracy		±20 arc seconds
	Repeatability		20 arc seconds

Standard Features

- Huffman Open Architecture Control (OA)
- Pendant-Mounted Control Panel
- "Arc Flash" precautions are greatly reduced due to our Bifurcated Electrical Enclosure that isolates the High & Low voltage sides and includes visual diagnostics through a window on the High Voltage side of the cabinet.
- Stress-Relieved Machine Base
- Digital AC Brushless Servo Drive Systems with Motor Encoders on all Axes
- Automatic Lubrication for all Axes
- Totally Enclosed Work Zone
- Machine Enclosure Locks
- Air Conditioner on the Electrical Cabinet
- Twin Powder Feeder System
- Isolation Machine Mounts
- Enabling Grip for machine operation and maintenance inside protective shields.
- Three (3) Light Signal Tower (Red, Yellow, Green)
- Complete Set of Documentation on CD (English)
- Machine Installation and Startup Service
- AutoCLAD™ part processing software for Cladding and Welding
- High-Resolution Camera for Larger Parts



Machine Weight 15,000 lb / 6,800 kg

Overall Dimension 104 x 90 x 115" / 2650x2300x2900 mm

Input Power 400/460 V (10%), 50/60 Hz, 3 phase



* The Huffman Logo is a registered trade mark of Huffman, LLC in the United States of America.

* Specifications are subject to change without notice in order to incorporate improvements resulting from ongoing R&D programs. Machines displayed in this catalog may depict optional equipment.

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