

DBCH-6000

Deep Bore Clad Head Product Specification

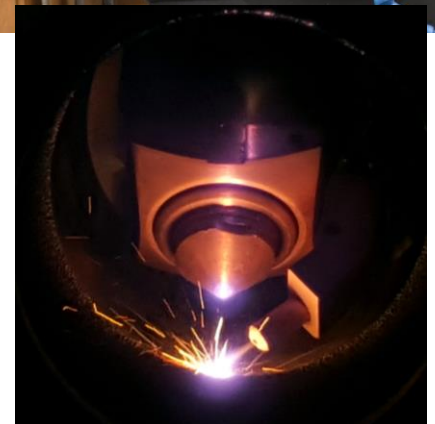


The DBCH-6000 is a rugged, versatile laser cladding tool ideal for bores or tubes 6" (150mm) in diameter or greater. A wide range of alloy materials can be used in either powder or wire form.

This tool features a unique 45° laser beam exit angle which allows cladding of both cylinder walls and seating surfaces, keeps the cover window further from the melt pool, and greatly reduces back reflections into the head. This innovation also greatly increases the life of the cover window, reducing downtime and replacement costs.

Features

- Up to 80" reach standard (custom to 360"+)
- Quickly interchangeable between powder and wire filler materials; hot-wire attachment also available
- High power / high deposition rates
- Flexible design: operator can adjust clad track width and tool standoff distance
- Cover window monitor alerts the operator if the cover window needs to be replaced
- Fine adjustment of fill material placement within the melt pool
- Does not require high beam quality laser source: Compatible with nearly all fiber delivered lasers
- Protective cover window is easily replaced
- Water-cooled tool and filler material tips: Stays cool even when operating at full power in a preheated bore

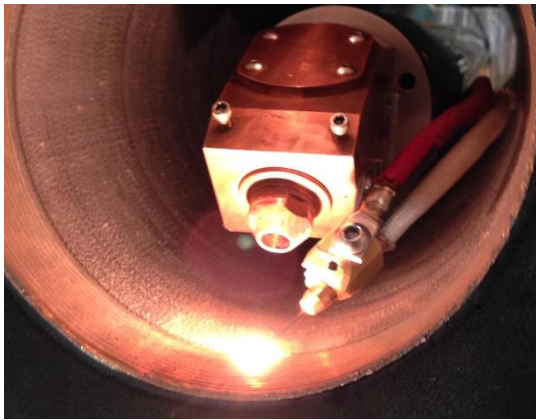


DBCH-6000

Deep Bore Clad Head Product Specification



Nittany Laser's ID clad tools have been in production facilities worldwide for over a decade and the current version is the 5th generation tool... our most versatile and robust tool yet. Our customers are highly satisfied with the tool and report excellent cladding results. They also report significantly fewer cover window changes, higher deposition rates, less downtime, and greater ease of use compared with other laser bore cladding tools.

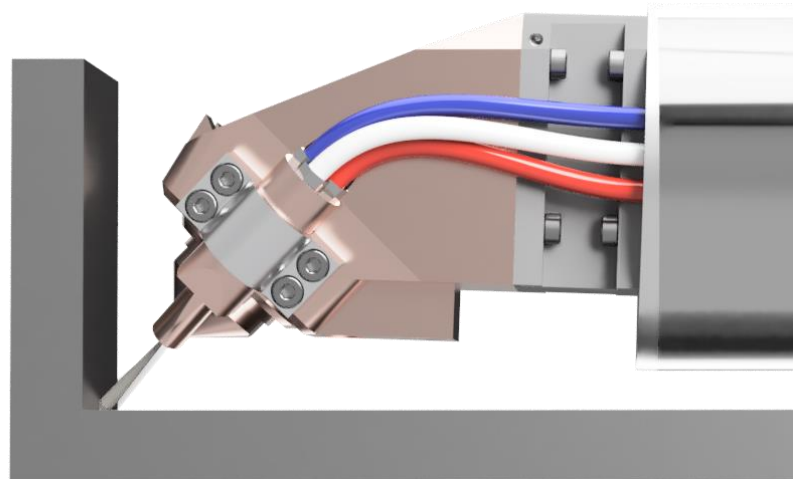


DBCH-6000 with hot-wire attachment

Wire / Hot-wire Advantages

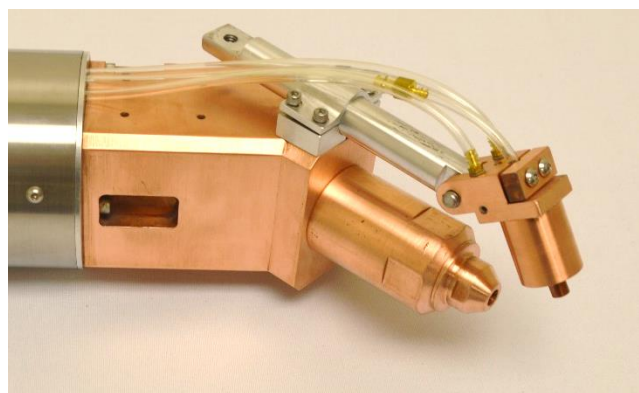
- No waste! 100% material capture rate
- Cladding can be applied in all orientations without changing process parameters
- Cladding can be performed in environments where powder cannot be tolerated
- 2-5 times higher deposition rates possible with hot-wire technology

The unique 45° beam angle makes the clad head a very versatile tool. It is able to clad almost any surface, including IDs, ODs, inside conical shapes, flat surfaces, corners... all without making adjustments to the head. Coaxial gas flow provides shield gas coverage and helps cool and protect the internal optics.



DBCH-6000

Deep Bore Clad Head Product Specification



The front shield gas diffuser along with the shield gas from the laser nozzle and the powder carrier gas from the powder tip provide excellent shield gas coverage.



The cover window monitor displays the temperature of the cover window and warns the operator if the temperature rises indicating damage to the cover window.

Product Specifications / Comparison

	DBCH-6000	Competitor
Maximum Power	6000 watts	3000 watts
Tube Diameters	6" ID and above (153mm)	3.5" and above (85mm)
Maximum Clad Length	Up to 80" standard (custom 360"+)	39" (1 meter)
Clad Thickness	0.010" to 0.120" single pass (0.25-3mm)	0.008" to 0.08" single pass (0.2-2.0 mm)
Clad Track Width	0.18" to 0.36" (4.5-9mm)	0.216 inches (5.5 mm)
Powder Feed Rate	up to 80 grams / min (4.8 kg/h)	up to 60 grams / min (3.6 kg/h)
Cold-Wire Feed Rate	up to 60 grams / min (3.6 kg/h)	no cold-wire capability
Hot-Wire Feed Rate	up to 130 grams / min (7.9 kg/h)	no hot-wire capability
Fine Adjust of Filler Material Placement	Yes	No
Setup Camera	Yes	No
Clad Seating Surfaces	Yes	No
Adjustable Clad Width	Yes	No
Adjustable Standoff	Yes	No
Yearly Calibration	No	Yes (~\$10,000, 1-4weeks)