Laser Next 2141

DIRECT ENERGY DEPOSITION

THE LARGE SCALE DEPOSITION SOLUTION WITH LARGE WORKING ENVELOPE FOR 3D FABRICATION, REPAIRING AND CUSTOMIZATION

The Laser Next 2141 combines the efficiency and productivity of the other Laser Next products with unique flexibility. Thanks to multiple machine configurations (fixed tables, split cabin, shuttles and turn table) it can meet any production need. Laser Next 2141 is a multipurpose solution developed and designed for large-part processing and jobshop production with advanced technology for different additive applications.

FLEXIBLE

Different applications with a single machine. Direct Energy Deposition, 3D cutting, 2D cutting and welding in a single multipurpose solution with multiple machine configurations.

HIGH-CAPACITY

Very large working envelope for large parts processing combined with reduced footprint.

RELIABLE

Fully tested and reliable thanks to the experience of the successful Laser Next platform.

ACCURATE

High precision, with no backlash or wear, thanks to the linear motor-driven focusing head and optical scales on main axes and on the focusing head.

EFFICIENT

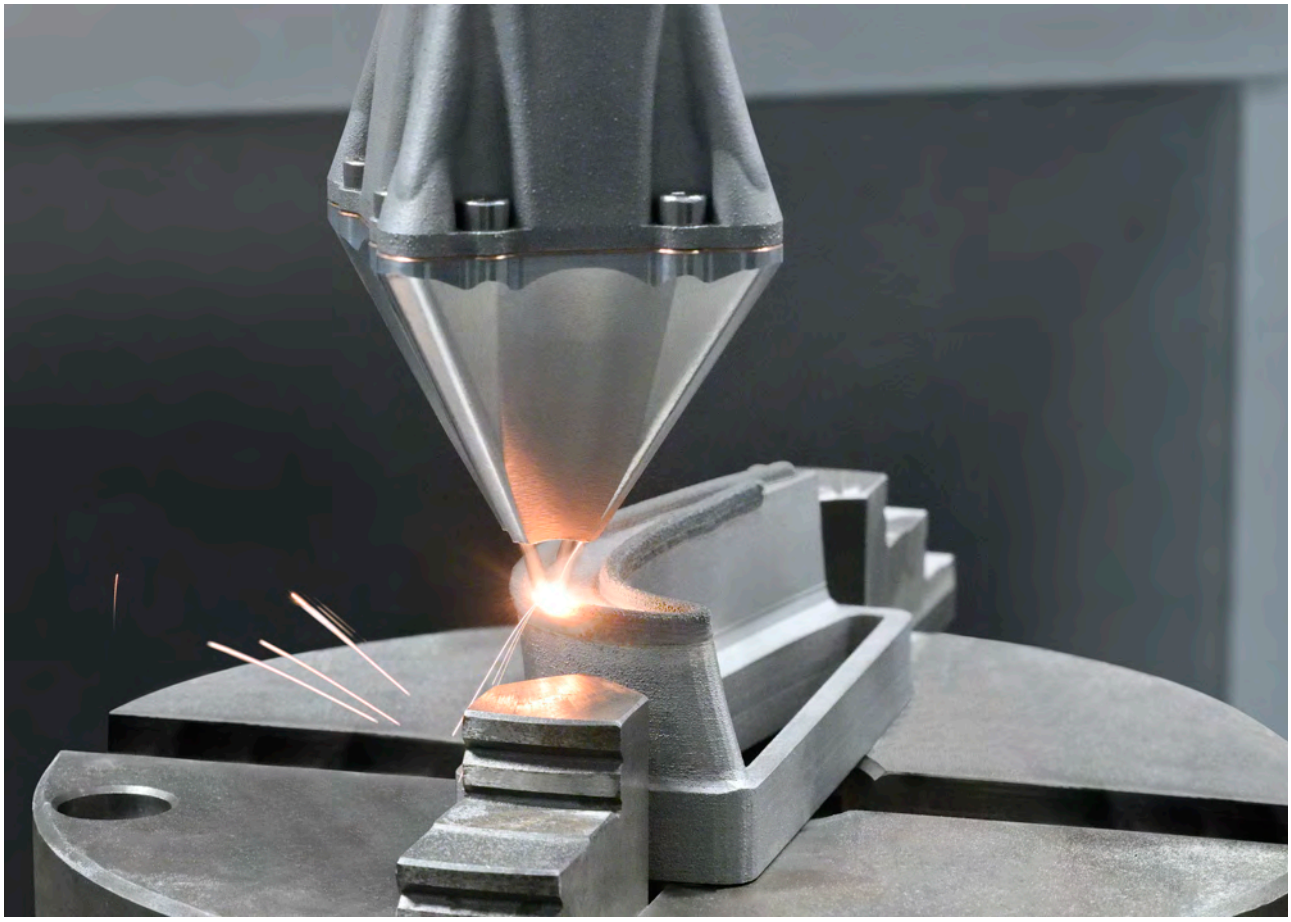
Higher Overall Equipment Efficiency due to reduced downtime and maintenance. Less resources dedicated and no special skills needed for simplified maintenance.

Technical Specifications

Laser Next 2141

LASER POWER	1 - 6 kW
TYPE OF LASER	Fiber Laser Yb, CW multimode
BEAM WAVELENGTH	1,070 - 1,080 nm
WORKING VOLUME	4,140 x 2,100 x 1,020 mm
AXES CONFIGURATION	5 axes
AXES STROKES	X = 4,140 mm Y = 2,100 mm Z = 1,020 mm
HEAD AXIS	A = 360° continuous B = +/- 135° C = +/- 12 mm
AXES VELOCITY	X, Y, Z = 120 m/min A, B = 540°/s (1.5 rev/s) C = 50 m/min TRAJECTORY = 208 m/min
ACCURACY	X, Y, Z = 0.03 mm A, B = 0.005°
ACCELERATION	X, Y, Z = 1 g A, B = 9.5 rev/s2 C = 4 g TRAJECTORY = 1.73 g
ROTARY OPTION	2 axes Rotation (load capacity option)
MAXIMUM OVERALL DIMENSIONS	4,650 mm x 7,400 mm x 4,450 mm
WEIGHT	22,000 kg
DEPOSTITION RATE	up to 100* cm^3/h * Dependent on process parameters and material used.
ROUGHNESS RA	min 20 micron - typical 40 micron
DEPOSITION ACCURACY	+/- 0.2 mm
POWDER FEEDER	1 to 4 hopper (1.5 or 5 lt)
CAM SOFTWARE	MasterCam DED
CNC SOFTWARE	P30L Prima Power

Laser
Machine and additive process details
Peripheral & auxiliaries - Software



DIRECT ENERGY DEPOSITION MACHINE FEATURES

Direct Energy Deposition machines are based on a Laser Metal Deposition process that uses focused thermal energy generated from a laser source to fuse powder metal sprayed at the focal point of the laser beam. This laser beam melts the deposited powder to the component.

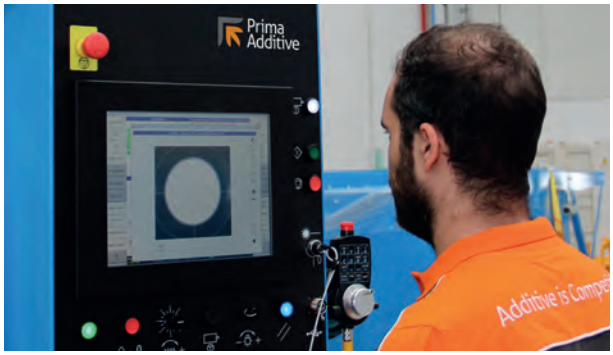
The laser is coaxial to the deposition head which moves in 3 to 5 simultaneous axes. A rotary tilt table can also be installed in order to keep the melt pool created in a horizontal plane. This capability makes the process suitable for adding features to existing parts as well as for repairs and coatings.

The machines could be equipped with modular powder feeder suitable for rapid change of material processed or for back-up to increase powder reserve and for processing two material simultaneously.

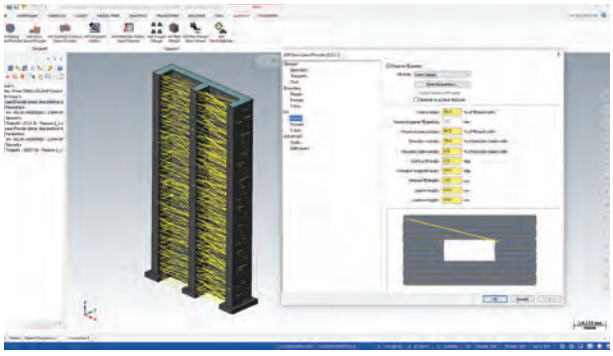
An additive/hybrid manufacturing intuitive software to program additive toolpaths and machining toolpaths with the possibility to control all the additive process parameters like the spot size, travel speed, laser power, shielding gas and powder flow settings.

A modular powder feeder suitable for rapid change of material processed or for back-up to increase powder reserve

Possibility to add 2 more axes with a tilt rotary table



Intuitive machine interface for easy part set up and printing



Easy-to-use cad/cam software interface for simple job preparation and toolpath simulation