



Superior Joining Technologies, Inc.

A Precision Welding Laboratory

AS 9100 Registered

1260 Turret Drive
Machesney Park, IL 61115

Multi-Axis Laser Cutting and Welding Center

Superior Joining Technologies, Inc. provides multi-axis precision laser cutting, drilling and welding to meet the tight tolerances required by the aerospace and other industries. We also work with three dimensional parts that require drilling & cutting on difficultly curved surfaces or at extreme angles for fabricators, metal spinners and hydroformers.



Superior Joining Technologies, Inc. utilizes the 5000 watt TRULASER CELL 7040 from Trumpf. With a working range of 13 feet X, 5 feet Y, and 30" in the Z axis, and maximum simultaneous axis speeds of 98 inches per second, it is the most advanced system of its kind in the Midwest.

With the ability to construct a cutting and welding program from a cad model, the prep time is greatly reduced.

The use of its integrated rotary axis makes

processing of tubular components highly efficient.

"As an observer of manufacturing technology, the automotive market has required a ½" flange for robotically spot welding parts, but with laser welding, less area, and less material in the weld joint will save on gas mileage as well as material costs. Having a machine like this in a job shop environment, which before was really an automotive OEM type machine, opens the door to so many other industries to new joining technologies and helps them become more competitive in their industry."

Lou Derango - Icon Machine Tool



Technical Data TruLaser Cell 7040 Machine

Working Range

X axis	4000 mm / 157"
Y axis	1500 mm / 59"
Z axis ³	750 mm / 29.5"
B axis swivel range	± 120°
C axis rotation range	n x 360°
Max. load capacity per table	2000 x 1500 800 kg

Max. Material Thickness as a General Rule for Cutting

Steel	25.4mm / 1"
Stainless Steel	15.88mm / 5/8"
Aluminum	12.7mm / ½"

Workable Clamping Area

X direction	4000 (2x2000) mm / 157 (2x78")
Y direction	1500 mm / 59"
Working height	750 mm / 29.5"
Working height with 2D cutting attachment.....	950 mm / 37.5"

Max. Axes Speeds

Travel speed in space.....	150 m/min / 492ft./min
X direction	100 m/min / 328ft./min
Y and Z direction	80 m/min / 262ft./min
B axis / C axis	60 1/min

Max. Accelerations

X, Y and Z direction	8 m/s ² / 26ft/s ²
B axis	200 rad/s ² / 11,450°/s ²
C axis	100 rad/s ² / 5,720°/s ²

Accuracy⁴

Smallest programmable increment	0.001 mm / 0.001° / .00004"/0.001°
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Max. Repeatability

Linear axes: X, Y, Z	0.03 mm / -.0012"
Rotation axes: B, C	0.005° / .005°

Max. Positioning Accuracy

Linear axes: X, Y, Z	0.08 mm / .003"
Rotation axes: B,	0.015° / .015°

TRUMPF CNC CONTROL

Basis: Siemens Sinumerik 840D
Pendant control panel

Laser

Laser power TRUMPF CO2 laser	2000-12000 watts
Maximum cutting power	6000 watts

³ Reduced accuracy/dynamics with fully extended Z = 750 mm axis for cutting 2D parts. It is recommended to use the 2D cutting box to cut 2D parts.

⁴ Pure mechanical accuracy without software compensation, according to VDI 3441 across the entire working range. The accuracy achievable on the work place depends, amongst other things, on the part geometry, it's pre-treatment, material and on its position in the work area.