LVD

LASER CUTTING MACHINES

ORION SERIES

A Cost-Effective Solution for Laser Processing

The Orion CO_2 laser cutting system combines advanced laser cutting technology with a streamlined design to offer an intelligent, cost-effective solution for today's laser processing needs.

The most capable laser machine in its class, Orion makes advanced laser cutting technology practical for all shops and for entry-level users.

A highly reliable machine, it provides impressive cutting capabilities in a compact, hybrid-style system able to process sheet sizes up to 1500 x 3000 mm or 2000 x 4000 mm without repositioning.

Engineered for efficiency and ease of use, Orion combines quick set-up and features such as programmable high-pressure oxide-free cutting and automatic cutting gas selection to provide consistent accuracy and high productivity.

Automatic focal adjustment and process control available on the Orion^{Plus} allow reliable un-manned operation even when processing thicker plate.

A fully integrated GE Fanuc laser package offers complete control of the cutting process. The integration of laser source, CNC control, AC digital motors and amplifiers ensures a high degree of reliability and superior processing speed.

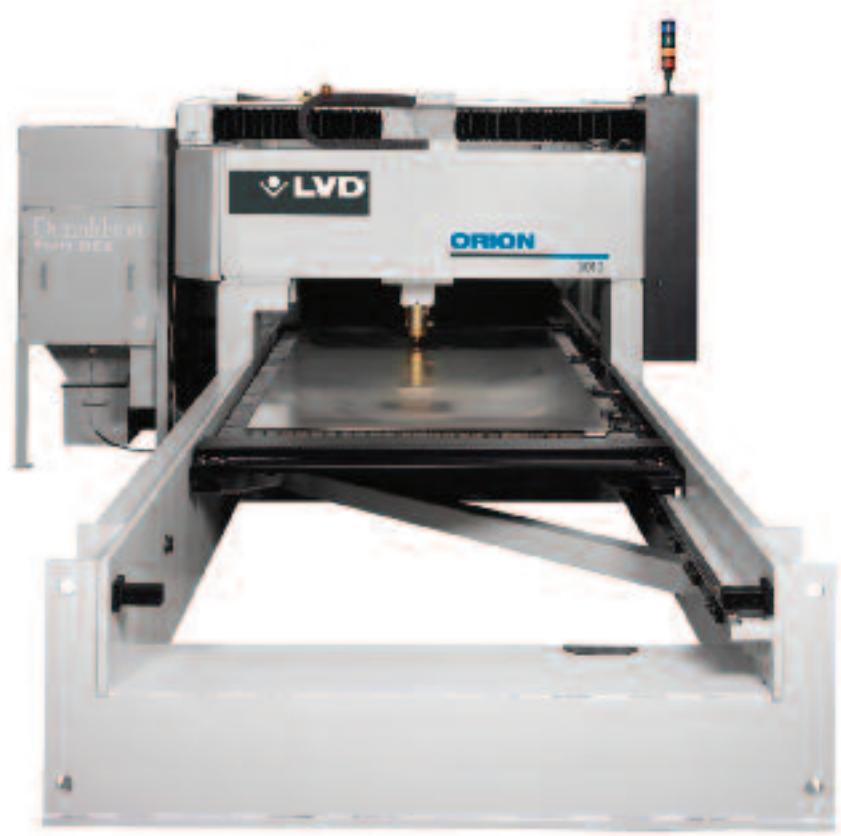
Other high-performance features include a fully programmable 290 mm Z-axis for efficient cutting of pre-bent parts or profiles, an edge function for clean-cut processing of sharp corners, and optional CADMAN-L 3D offline programming software.

Orion^{Plus} opens the door to the world of automation with an optional fully automatic load-unload system.

LVD's Orion – an intelligent choice for fabricators that want proven laser technology in a user-friendly, economical machine.

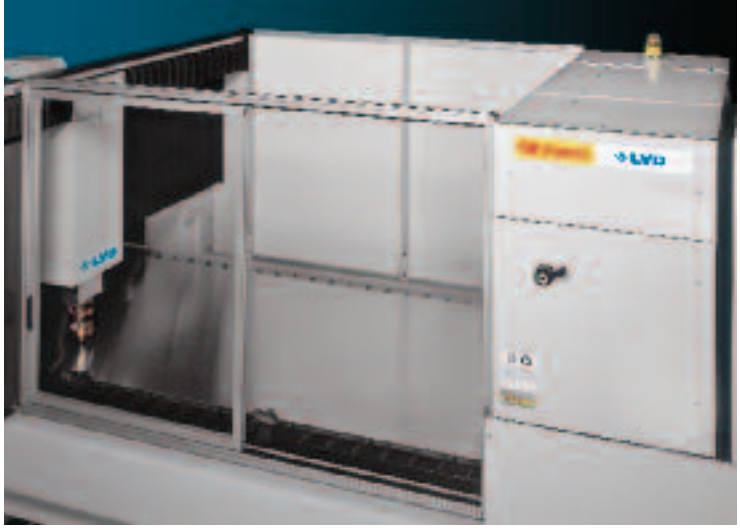
Orion

- Compact hybrid-style laser system
- Handles sheet sizes up to 1500 x 3000 mm for Orion 3015 and 2000 x 4000 mm for Orion 4020
- Low operation and maintenance costs
- Easy to use and quick to set up
- Equipped with a single system GE Fanuc laser package, incorporating laser source, control, motors and AC drive amplifiers
- Features an extensive database of cutting technology for processing a wide range of materials
- Features dust collector filter, fences and light guard as standard equipment
- Forms an extremely flexible manufacturing cell in combination with a punch press and a pressbrake for the production of a wide variety of components



- Offers a choice of 2500-Watt or 4000-Watt laser source
- Highly rigid design with precision drives ensures high accuracy cutting
- Optional CADMAN-L 3D software maximizes flexibility and productivity

Efficiency & Productivity



Efficient Operation

Orion is designed to be easy to use and efficient to operate with low maintenance and operating costs. Design advantages include:

- Compact rugged frame construction features a cross-beam base structure for easy installation. No special foundation is required.
- Ergonomic design provides user with full access on three sides enabling quick and simple loading and unloading, and providing good visibility during the cutting process. The machine table is positioned at working height. The operator has easy access to the cutting head while at the machine control.
- Built-in exhaust system removes fumes and molten material in an environmentally-friendly manner

Quick Set-up

Orion incorporates time-saving features that reduce set-up:

- Built-in safety system protects the cutting head in case of collision with the workpiece
- High pressure cutting head incorporates quick-change 5" and 7.5" lens with cassette system allowing fast, simple replacement of the water-cooled focusing lens
- Built-in capacitive height sensor automatically compensates for any unevenness in the material
- Long Z-axis travel allows efficient cutting of pre-bent parts or profiles

Flexible & Productive

A highly accurate laser cutting system, Orion provides the flexibility and power needed for exceptional laser processing:

- Simple beam delivery system guarantees easy alignment and a stable beam path
- Laser, optical path and mechanical construction of the machine ensure that temperature fluctuations do not impact the alignment of the laser beam
- Edge function feature processes sharp corners cleanly, particularly in thicker materials
- Total power control offers automatic adjustment of the laser power as a function of speed change, achieving a constant cut width with a small heat-affected zone
- Swift function ensures a fast, smooth motion of machine axes
- NC Optimization maximizes machine productivity without operator intervention by automatically determining the cutting head motion based on travel distance
- Automatic cutting gas selection
- Automatic assist gas pressure control with servo valve

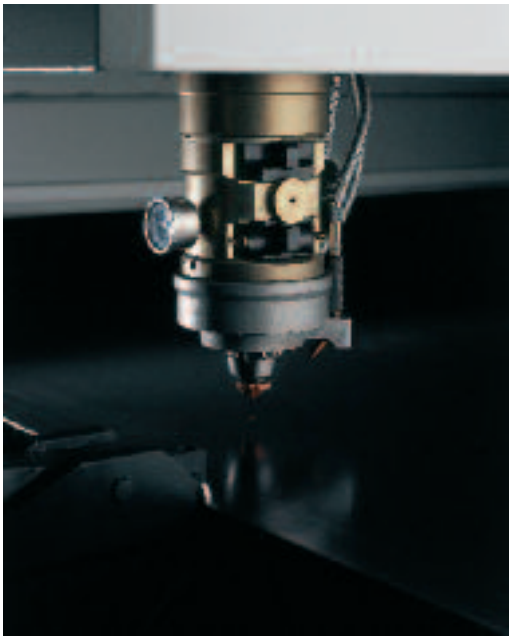
Orion[Plus]

Orion[Plus] incorporates a range of features for automated operation:

- NC-Focus automatic focal adjustment
- Process control including piercing control and plasma detection
- Color display
- Extended memory
- Oil spray and air gun allow optimal fast piercing

Optional Accessories

- Manual loading system on Orion and Orion[Plus]
- Automatic loading system with Touch Screen control on Orion[Plus] 3015



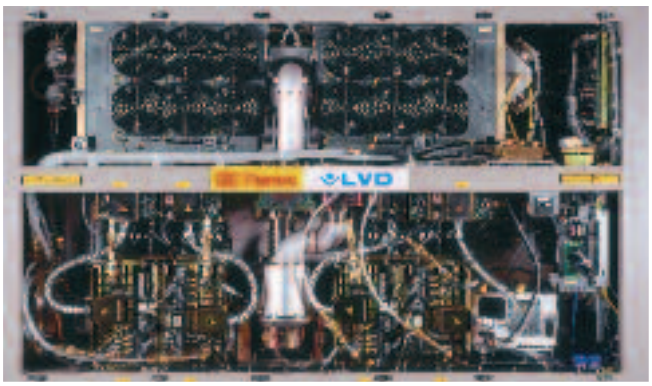
Orion[Plus] cutting head

Control screens simplify programming of the automatic load/unload system

Fully Integrated Control & Laser

Like all LVD lasers, Orion features an advanced, fully integrated GE Fanuc control and laser package, providing full control over the cutting process with the most reliable laser technology in the world. This complete integration of the laser source, CNC control, AC digital motors and amplifiers offers distinct advantages:

- Integrated system offers a high degree of reliability, as well as superior processing speed
- User-friendly GE Fanuc control provides perfect reproduction of programmed contours, producing acute angles even at high speed



- All parameters, service diagnostic and start-up procedures are conveniently displayed on the screen
- Exceptional processing speed and outstanding edge quality
- Fast flow, high power CO_2 laser is excited at 2 MHz. This lower frequency excitation allows efficient use of laser gas and reduced pollution of the circulating gas, increasing the life span of optical elements, and reducing maintenance costs.
- Fanuc E-series resonator is equipped with long-life discharge tubes, cyclone cleaner unit, and photo-catalytic elements
- Division of the power supplies into separate modules contributes to the superior overall reliability of the GE Fanuc laser source
- All laser and machine parameters can be set via a single CNC control

CADMAN®

Powerful Offline Software

LVD's CADMAN-L 3D programming software, an optional feature, speeds programming time and streamlines the laser cutting process with its powerful features. CADMAN-L 3D provides:

- Flexible lead-in/lead-outs for every kind of contour
- Advanced common line cutting
- Collision avoidance and automatic cutting sequence
- Complete flexibility to manually cut and nest laser parts
- DXF, DWG, IGES, SAT, MI file importation
- Automatic or interactive determination of cutting sequences
- Interactive or optional automatic nesting of different parts and shapes
- Seamless connection and integration with CADMAN-B 3D offline bending software

Machine	Orion 3015	Orion^{Plus} 3015	Orion 4020	Orion^{Plus} 4020
Max. Sheet Size	3000 x 1500 mm	3000 x 1500 mm	4000 x 2000 mm	4000 x 2000 mm
Max. Sheet Weight	570 kg	570 kg	1000 kg	1000 kg
X-Axis Travel	3080 mm	3080 mm	4090 mm	4090 mm
Y- Axis Travel	1550 mm	1550 mm	2060 mm	2060 mm
Z-Axis Travel	290 mm	240 (100) mm [1]	290 mm	240 mm
Memory	512 kb	2 Mb	512 kb	2 Mb
Display	Monochrome	Color	Monochrome	Color
Max. Positioning Speed				
X,Y-axis	100 m/min.	100 m/min.	100 m/min.	100 m/min.
Z-axis	15 m/min.	15 m/min.	15 m/min.	15 m/min.
Repetitive Accuracy	± 0,025 mm	± 0,025 mm	± 0,025 mm	± 0,025 mm
Positioning Accuracy [2]	± 0,05 mm/m	± 0,05 mm/m	± 0,05 mm/m	± 0,05 mm/m

Laser

Type	GE-Fanuc HF excited CO_2 laser	
Laser Power (± 2 %)	2500 W	4000 W
Range	100-2500 W	100-4000 W
Output Stability	± 1 %	± 2 %
Wave Length	10,6 µm	
Pulse Frequency	5 Hz - 2 kHz	
Laser gas	10 l/hour	
Cooling water	Sealed circuit	

General Specifications

Machine Dimensions	Orion 3015	Orion^{Plus} 3015	Orion 4020	Orion^{Plus} 4020
L	7950 mm	8665 mm	10800 mm	10800 mm
W	3900 mm	3900 mm	4600 mm	4600 mm
H	2200 mm	2200 mm	2200 mm	2200 mm
Weight	11500 kg	13000 kg	15000 kg	15000 kg
Material Capacities	**2500 W**	**4000 W**		
Steel	16 mm	16 mm		
Stainless Steel (N_2)	10 mm	12 mm		
Aluminum	6 mm	10 mm		

Automatic load/unload device

Max. Sheet Size (mm)	3000 x 1500 x 12 mm
Max. Stack Weight	2500 kg
Max. Stack Height	100 mm
Weight	4800 kg
Machine Dimensions (including Orion^{Plus} 3015 machine)	
L	8665 mm
W	6600 mm
H	3800 mm
Controls	PC-based control
Display	Color Touch Screen

(1) Reduced Z-axis travel with load/unload system

(2) The achievable accuracy depends, among other things, on the type of workpiece, its pre-treatment and sheet size. According to VDI/DGQ 3441.

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