

The Bend
The Combi
The Laser
The Punch
The System
The Software

rapido[®]
The laser solution

Productive, efficient, flexible

Laser machines today have reached very high performances and are increasingly replacing more conventional methods in almost all industrial fields.

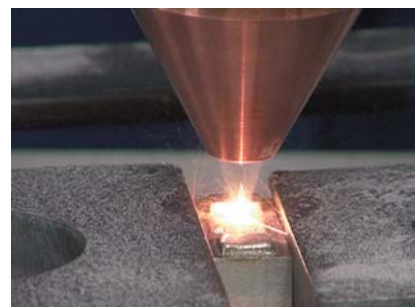
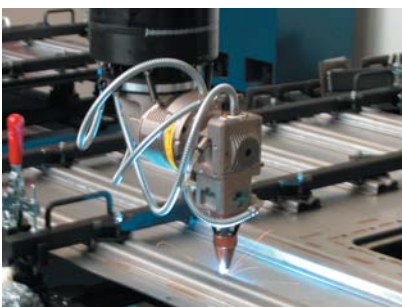
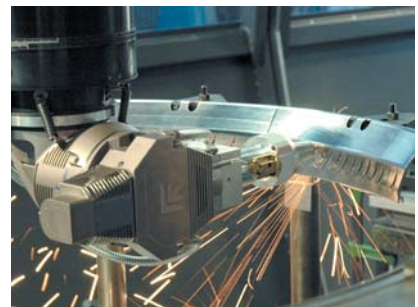
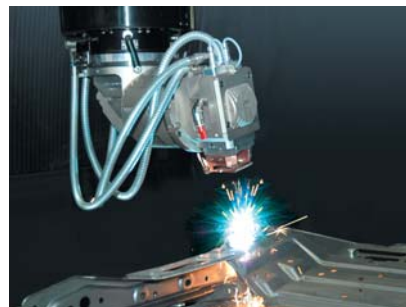
The real challenge for manufacturers of these systems is now to combine the enhancement of their performances with the improvement of their efficiency, flexibility, ease of use and eco-friendliness, features which are more and more important in every industrial application.

The latest generation of RAPIDO® is a highly effective answer to this modern challenge.



Versatile, but always at its best

Over 30 years' experience in the field allows Prima Power to offer you the best results in all specific cutting and welding applications. CO₂ or fiber lasers are available to answer different production needs.



Many good reasons to use RAPIDO®



The profit

- Best in class for machine architecture and control solutions
- First rate productivity, quality, efficiency
- Best precision and dynamics available on the market
- Flexibility: different applications with a single machine
- Well-proven in the most demanding manufacturing environments
- Long-lasting experience in the widest range of applications
- Highly efficient after sales services, customizable on your needs

The footprint

- High productivity combined with high energy efficiency
- Low operating costs and reduced maintenance
- Great accessibility and freedom of configuration
- Large work volume with reduced machine dimensions
- Flexibility: simple and immediate set-up and changes of production
- Easy and smart use, ergonomic design

The logo for 'green means' features a green curved line above the text 'green means' in a green, sans-serif font. A registered trademark symbol (®) is located at the end of the word 'means'.

Dynamics and power

Machine

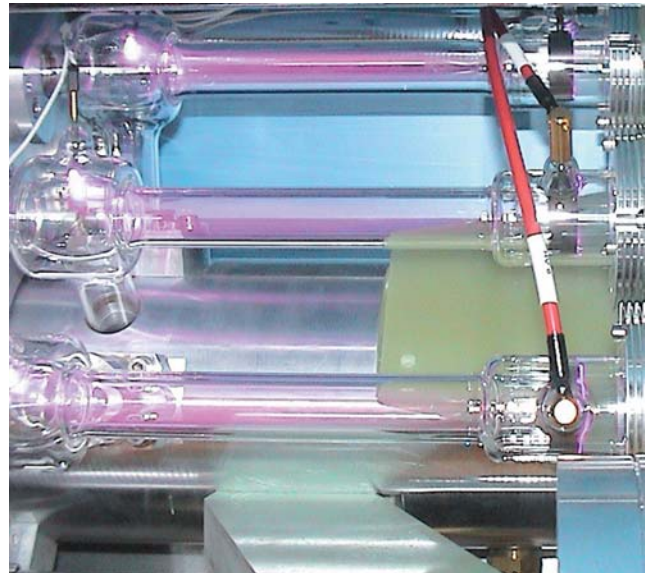
- Mobile optics: accuracy and speed are independent of the weight and size of components to be worked.
- Monolithic structure: laser, CNC and electromechanics in a compact, single unit.
- Synthetic granite frame designed with state-of-the-art topology optimization methods: innovative solution for stiffness and damping capacity, resulting in smoothness of movements, even at the highest dynamics.
- Overhead retractable arm, cantilever, no sagging: great accessibility.



Laser

- High brilliance fiber laser with high energy efficiency, no maintenance and eco-compatible use. It gives greatest benefits for large series production. Available with powers from 2 to 3 kW.
- CP or CV series CO₂ laser with top application flexibility, high reliability and low running costs, particularly suitable for frequent changes of production. Available with powers from 2.5 to 5 kW.

Performances and profitability of fiber and CO₂ lasers depend on application: Prima Power experts will suggest you the best solution for each specific case.



Numerical control

P30L numerical control by Prima Electro:

- User-friendly slim console with 17" LCD touch screen, trackball and retractable keyboard.
- High computational power and powerful HMI, Windows® embedded.
- Advanced algorithms for predictive trajectory control.
- TOB (Technology On Board) and TOBIA (Technology On Board Interface Application).
- Integrated CAM (optional).

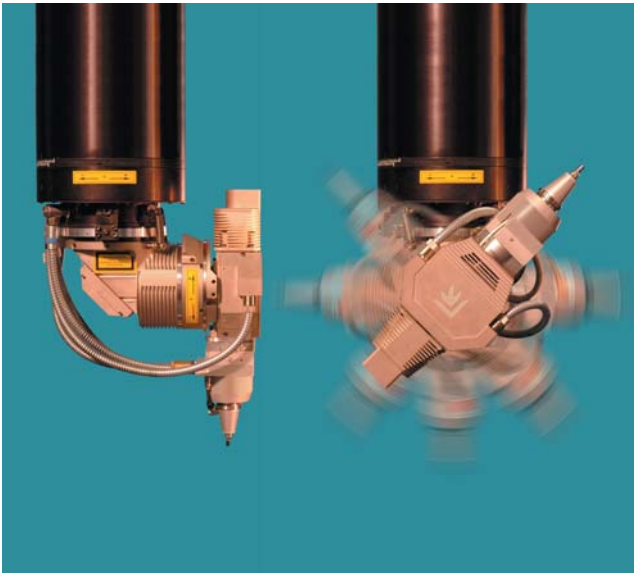


Easy and flexible use



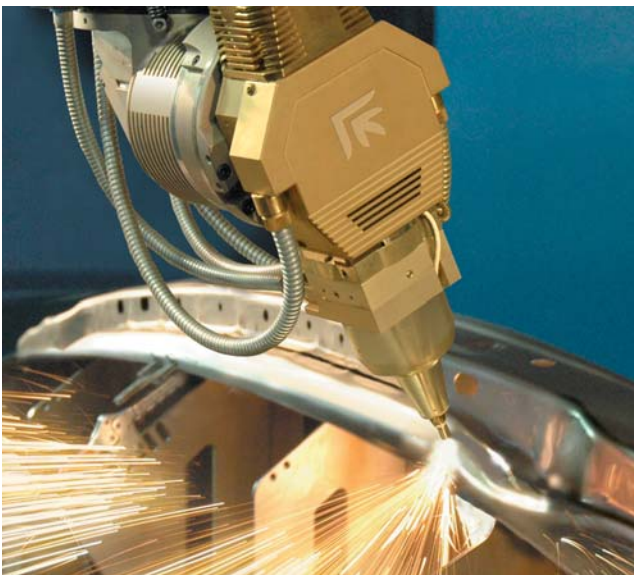
Smart programming

- User-friendly and powerful 3D and 2D CAD-CAM software. They allow an easy and quick generation and testing of the entire cutting program starting from the mathematic models of the workpiece.
- Graphic interface for easy part-program optimization: no need of G-Code modifications, all editing is graphically performed.
- Portable self-teach programming handbox, ergonomic and intuitive to use (large screen, graphic interface, joystick).



Shorter cycle times - Higher flexibility

- Predictive trajectory control: maximized speed according to desired accuracy.
- LPM: remarkable reduction of piercing time.
- FPC: production changes without optics set-up.
- Perfect Tool package: quick, easy and accurate head geometries calibration and beam-tip alignment.



Focusing head

- Direct drives and transducers: high dynamics and accuracy, no backlash, reduced maintenance.
- Minimum encumbrance and excellent penetration capacity.
- Dedicated adaptive axis, with very high dynamics maintains workpiece surface stand-off distance.
- A measuring machine within the cutting one: RAPIDO®'s cutting nozzle can be used as a measuring tool to speed up the set-up time as well as to validate parts directly on the machine.
- Double safety joint (SIPS): in case of collision the nozzle and/or the whole head collapse. Quick and simple repositioning.
- Modularity and application flexibility.

Maximum safety and reliability

Automation

RAPIDO® can be equipped with different automation solutions, ranging from very simple to very complex ones, depending on the type of process, the quantity and size of the parts to be manufactured and the process duration for each part.

Safety

All solutions provide safe operation, and are equipped with optimized fume exhaust. Windows materials are chosen according to the laser source type (CO₂ or fiber), and in order to ensure maximum safety they are active and stop the machine if accidentally hit by the laser beam.



A variety of solutions

RAPIDO® is supplied with a “standard” protection cabin with automatic doors giving total accessibility to the full working volume.

An optional “split” wall can be easily added to this solution, dividing the working volume in two halves, and giving the possibility of alternately loading/unloading on one half while the laser head works on the other half.

The wall can slide to the side of the working volume recovering full accessibility.

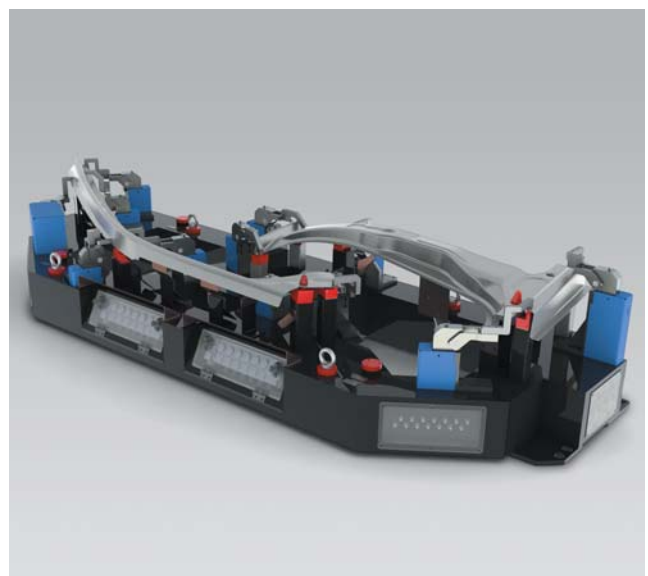
The “split” option is not compatible with fiber laser source.

The “turntable” solution: one safety wall rotating with the table allows loading/unloading operations in total safety during part processing inside the machine.

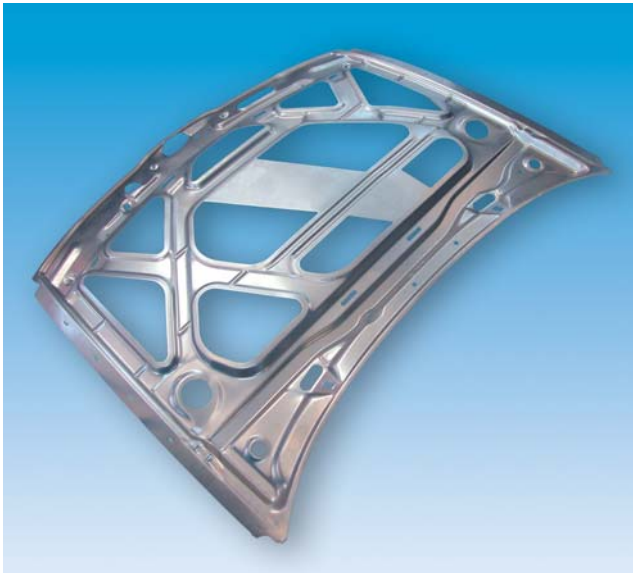
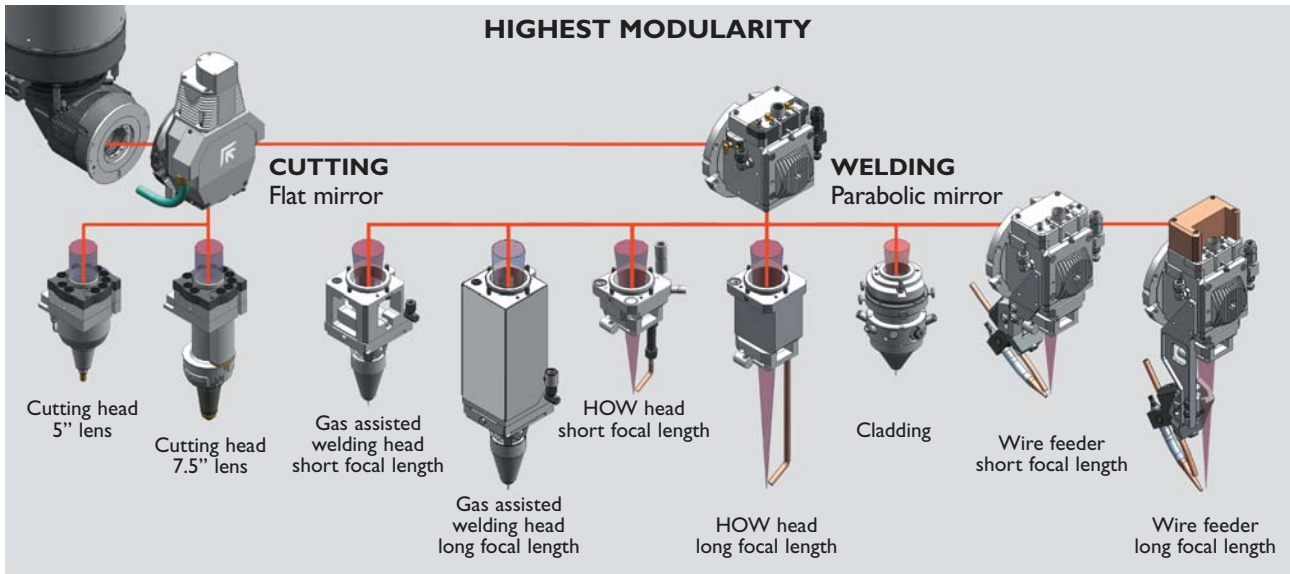
The “monofrontal” solution features two motorized shuttles that can be alternately or jointly loaded.

More complex solutions can be tailored to your needs, building upon the above mentioned standard components and adding to them various options as:

- tables for 3D components with quick fixtures repositioning interface;
- table for 2D parts;
- rotary axis for tube processing;
- high precision rotary table for cylindrically symmetric parts processing.



for a variety of applications



Applications

RAPIDO® features top class performances in every application field. Thanks to highly specialized solutions tailored to specific needs, it is very flexible, and conversion from one type of production to another is easy and fast.

A fast changing system of the head attachment allows cutting of higher thickness materials, welding with gas protection through coaxial nozzle or dedicated trailing shield, remote welding, cladding, etc.

A typical cutting application are automotive parts mainly in boron hot stamped steel but also in mild steel or aluminium. Common materials for aerospace parts such as titanium and NiCo alloys are also laser cut.

Welding heads are available both with coaxial nozzle for protection gas adduction or with the "HOW" (Hands-Off-Welding) remote welding solution.

A wire feeder or a cladding head are available to add material if required by the application.

A variety of materials can be welded as stainless or mild steel, certain types of aluminium or even titanium.



Profitable solutions

For the maximum flexibility



“**Basic solution**”: ample standard cabin and two fixed tables ideal for top quality subcontract work.



“**Monofrontal solution**”: all the advantages of the basic solution and, instead of fixed tables, two highly repeatable motorized and independent shuttles (500 kg capacity each), for easier handling of workpieces and fixtures.



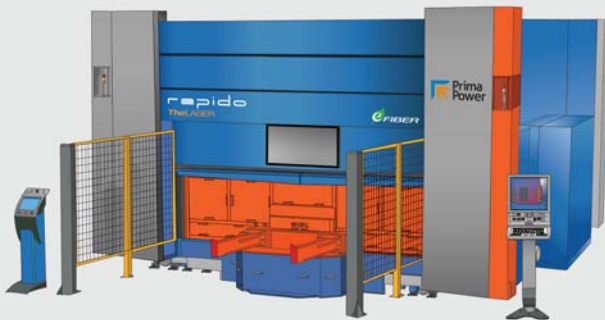
“**Aerospace solution**”: for the typical needs of the aerospace industry; with high precision CNC controlled rotary table and large 2D cutting area with automatic pallet changer.

for every production needs

For the maximum productivity



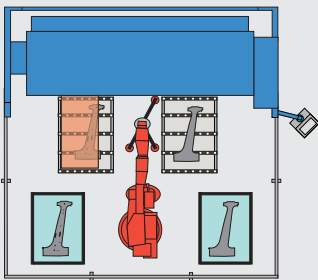
“Split cabin solution”: a partition wall splits the working volume into two halves. While on one side the machine is producing, on the other side the operator loads and unloads the workpiece. The wall can slide to the side of the working volume recovering full accessibility.



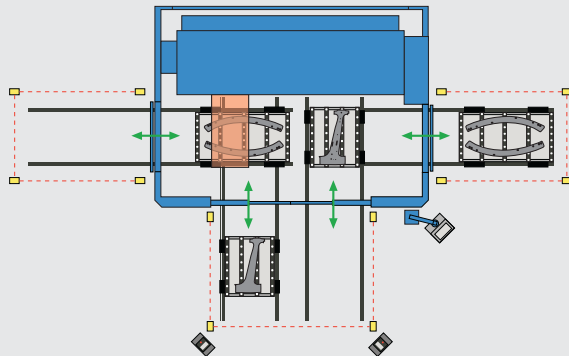
“Turntable solution”: a turntable placed in front of the machine exchanges the pieces allowing the no idle time loading/unloading. A partition divides the table area in two halves, so that while the machine is working inside the cabin, the operator may unload and reload the pieces on the external portion of the turntable. The automatic scraps conveyor is available as an option.

Customizable solutions

The large working volume and high accessibility mean that there is virtually no limit to the workpiece handling configurations. The following are a few examples:



Robotized loading/unloading cell



Double frontal and side shuttles

24/7 production

Turn-key solutions

Thanks to its extensive experience in the sector, Prima Power can offer its Customers turn-key solutions, with total care and responsibility on production systems (machine/s, automation, part fixture integration).

Prima Power offers also support during the production start-up phases, both after machine delivery or whenever the need may occur.

Prima Power Services

Prima Power has a strong and efficient service network around the globe. The aim of our services is reaching maximum productivity and profit for our Customers.

The range of services offered is comprehensive, covering the entire life cycle of the machine: from consultancy to installation and training, from on-site to phone support and teleservice, from maintenance to product updates.

Our Tech Centers and Specialist Teams offer support for the choice of the right solution for the specific kind of production, and advice and instruction on technology, materials, cycle times optimization, automation and production flows, programming and CAD/CAM systems, etc.

Particular attention is paid to dedicated service contracts, granting maximum machine availability and highest productivity at all-in prices, particularly useful in case of intensive and 24/7 use of machines and systems.



Technical specifications

Axis strokes	X mm 4080	Y mm 1530	Z mm 765
Rotary axes A B	360° continuous (without limitation) ± 135° continuous		
Adaptive axis (cutting head) C	± 10 mm		
Speed Trajectory X, Y, Z A, B	175 m/min 100 m/min 1.5 rev/s		
Acceleration Trajectory X, Y, Z A, B C	1.4 g 0.8 g 60 rad/s ² (9.5 rev/s ²) 4 g		
Linear axis resolution	0.001 mm		
Head axis resolution	0.00006°		
Accuracy (*) • according to VDI/DGQ 3441 standards • measurement length: complete stroke X, Y, Z A, B (*) the accuracy of the piece depends on its type, dimensions and pretreatment, as well as on the application conditions	Positioning accuracy (Pa): 0.03 mm 0.005°		Repeatability (Ps): 0.03 mm 0.005°
Optional rotary axis (lathe): - minimum diameter - maximum diameter	20 mm 300 mm		
Maximum overall dimensions (protection cabin, electrical and CNC cabinets included)	Length mm 6950	Width mm 5650	Height mm 3750
Weight	18,700 kg		
Colours	Fixed parts: RAL 5015 - RAL 9006 Moving parts: RAL 2008		

CO₂ Laser Power (W)	2500	4000	5000
Laser consumption (kW)	25	31	38
Chiller consumption (kW)	11	18	22
M ²	2.2	2.4	2.4
Power density (kW/cm ²)	1×10 ⁶	1.5×10 ⁶	2×10 ⁶
Fiber Laser Power (W)	2000	3000	
Laser consumption (kW)	8	12	
Chiller consumption (kW)	5	6	
M ²	6	6	
Power Density (kW/cm ²)	3×10 ⁷	4×10 ⁷	

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