

## LASERCUT-3000 based on direct drives and fiber laser

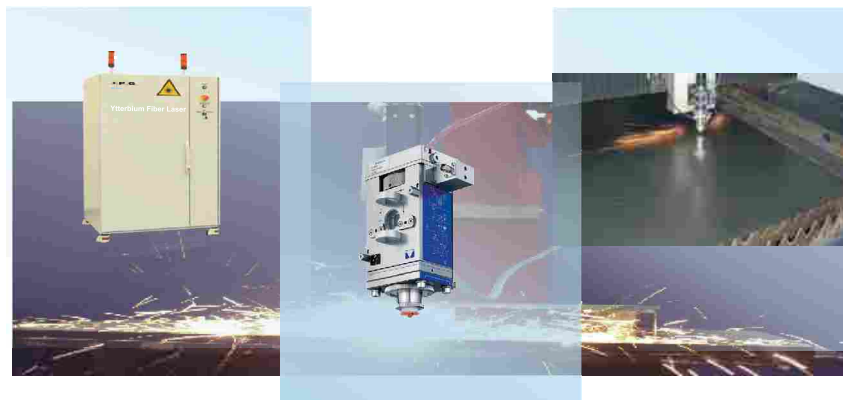


Laser cutting machine LaserCut-3000 is used for a cutting of wide range of materials: constructional and stainless steel, aluminium and its alloys, copper alloys. It personifies the advanced innovative solutions both from the laser technology and gantry systems fields.

The laser cutting machine is equipped with fiber-optical laser of international corporation IPG Photonics Corp, which has perfectly proved itself in the industrial cutting and welding systems, and the advantages of Ruchservomotor gantry systems based on linear drives, which give the guaranteed accuracy and dynamic characteristics margin, ensuring reliable and long-term maintenance in the workshop conditions.

### Main advantages:

- High accuracy and speed of the contour-cutting of the sheet material with thickness from 0,5 to 25mm ;
- The absence of open optical channel for energy transfer - the laser emission is transferred via flexible optical channel directly into cutting zone;
- The economy efficiency of the technological processes because of high efficiency factor of the fiber ytterbium laser (4 times more efficient than CO<sub>2</sub> systems);
- Low operating costs during system maintenance due to high reliability of the gantry system and ytterbium fiber laser, as well as the absence of needs to use high clearing gases for service of optical paths of the laser;
- Standard machine delivery includes section cutting table with 2 sliding pallets, system of air filtration with self-cleaning of cartridges. Thanks to it's this machine provides optimum productivity, precision processing, high quality cutting and profitability of operation.



## Short description:

**LaserCUT-3000** in its basic assembly consists of gantry system 3x1.5m(option - 2x6m) Z-stage, controller, sensor for tracking the sheet surface, ytterbium fibre laser with power from 2kW to 4kW, cooled optical head with collimator and exchangeable nozzles for supplying cutting gas.

In the capacity of feeding devices linear synchronous servomotors made by "Ruchservomotor Ltd." are used. The motors are built in aluminium profile with linear feedback sensors and precision linear guideways, which are protected from sparks and drops of smelt by heat-resistant bellows.

High peak force and rigidity of the linear drive ensure required accelerations up to 1.5g, which are necessary for improvement of the productivity of the machine during the cutting parts with small bending radius and acute angles.

Due to the direct drive usage the laser cutting machines are characterized by high feed rate and free movement speed up to 180m/min, high static and dynamic accuracy and absence of backlash.

The used software, CNC and controllers manufactured are characterized by completely digital control a drive, compatibility with widespread programs CAD-CAM of optimization sheet cutting, interpretation of standard formats of commands of moving in a G-code, and also the spline-interpolation, allowing to carry out cutting any curvilinear trajectories without a time-lapse stop, that essentially raises productivity of the machine tool.

While in service laser machine LaserCUT-3000 made by Ruchservomotor have proved as the exact, high-efficiency and reliable equipment completely corresponding to requirements of modern manufacture.

## Technical characteristics

Maximal stroke X, m	3 (max 6m)
Maximal stroke Y, m	1,5 (max 2m)
Maximal stroke Z, mm	100
Maximum cut thickness on the steel/stainless steel, mm	25/13
Maximum stroke speed on X,Y axes, m/min	180
Repeatability, mm	±0.01*
Resolution, mm	0.001
Stroke speed on Z axe, m/min	5
Maximum acceleration, m/s <sup>2</sup>	15
Controller type	LSMC-4
Controller interface	RS-232, USB
Recommended laser power, kW	2.0-4.0
Wave length, micron	1.065
Maximum weight of processing details, kg	900
Overall dimensions of the machine, mm	8700 x 2500 x 2500
Industry standart NC codes DIN/ISO-6983 support	

\* The accuracy of the details depends on the material properties and degree of its heating. Measurements accordingly to VDI/DGQ 3441 standarts, measurement length 1m