CHOOSE YOUR POWER

LASERMAK

Co_2 Flying Optic Laser Cutting Machine

ERMAKSAN

80.000 m^2

Largest sheet metal working machinery manufacturer under single roof in Europe

ERMAKSAN

700 qualified staff and professional engineers

3000

3000 machines annually manufactured

ERMAKSAN is well known for productive and result oriented research&development activities as well as affordable high-tech products in fabricating industry. With 45 years of manufacturing experience behind Ermaksan is a strong company which continuously invests on technology and increases productivity.

ERMAKSAN manufactures 3000 machines annually with 700 qualified staff in a fully modernized 80.000 sqm factory equipped with state-of-art machinery. ERMAKSAN exports 80% of its production through agents under the brand ERMAK from Canada to New Zealand, more than 70 countries in the world, and provides full technical support.

By purchasing ERMAK machines, you will be investing on your future. With this decision, we are promising to deliver the machine that will suit your needs and provide the best purchasing experience by means of price, delivery, quality, training and after-sales technical support.

ERMAKSAN MACHINERY

Co_2 Flying Optic Laser Cutting Machine

To get perfect cutting results, Lasermak frame and components are specially machined in CNC machining centers with maximum precision. Lasermak is equipped with linear motors which is an optional specification in most cases for other brands. The axis, moving along with strong magnets mounted on the frame, provide high speed and maximum acceleration. (Y axis 3G). This high speed and acceleration enables your company to increase efficiency and productivity while also decreasing operational costs.

Frame and bridge are assembled by expert engineers and tested with latest high-tech measuring technology in every phase of manufacturing process. This is the main reason of the perfectness in square and circular cutting. There is no need for a second operation and Lasermak produces parts ready for assemble.

Fast and high quality cutting

Why Lasermak

- By using Lasermak, you will benefit from automation in your manufacturing process as well as avoid making manufacturing failures
- You can make non-stop (mass) production for 24 hours and decrease your manufacturing costs.
- Especially by means of laser cutting, you will also be saving from tools and other apparatus
- Lasermak produces finished products, require no other machine and reduce human failures for optimum production.
- You can cut materials like steel, nickel compounds, chrome, stainless steel and aluminum with smooth surface and with the highest tolerance.

Linear motorized ultra fast Lasermak is combined with today's latest Co_2 resonator technology. 3 main points were in our engineers' minds while designing Lasermak;

1- Low operating costs;

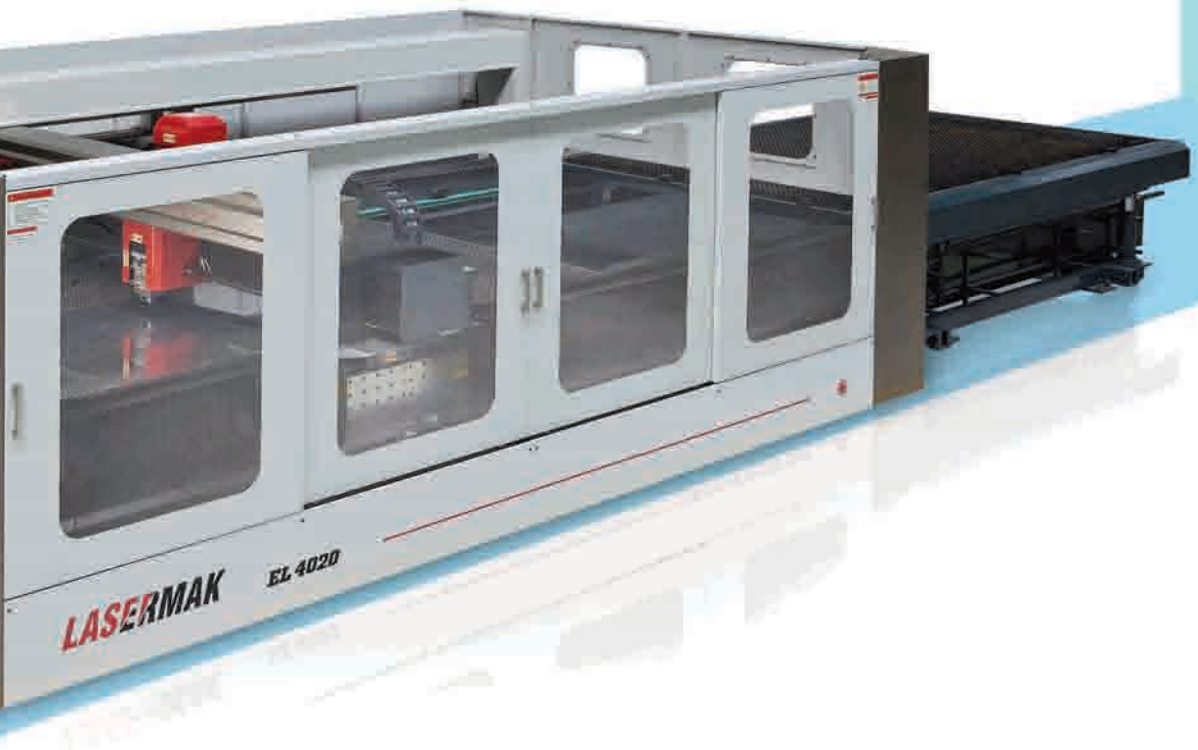
While the competition in the market is getting harder, low electricity and gas consumption will create big advantages and will let you to return profitable and quick replies for business opportunities ahead.

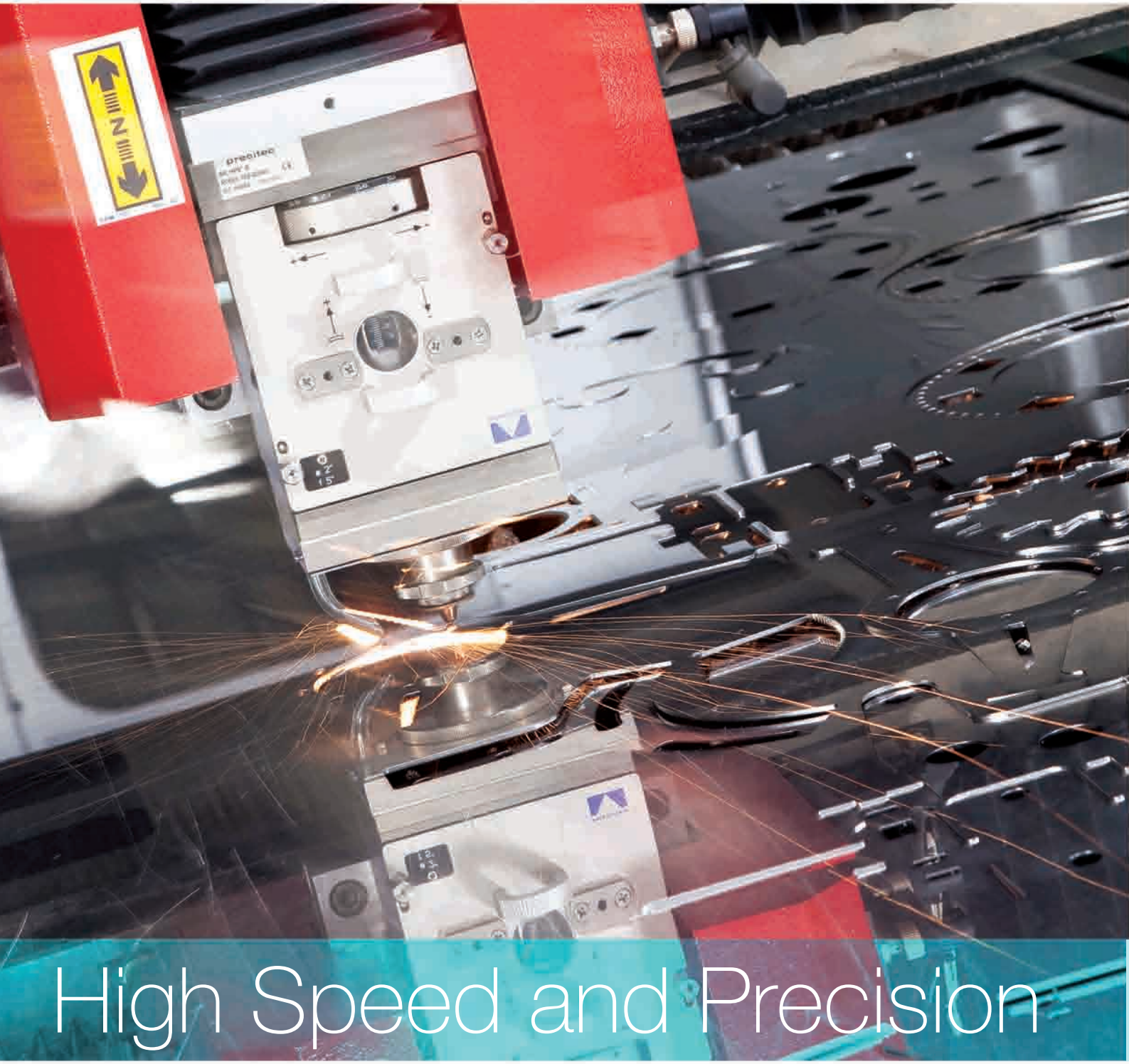
2- Durability;

Strong frame construction, world wide recognized brands and long life components are used in Lasermak therefore this will increase your business performance in every condition.

3- Best Machine Best Price;

Ermaksan reflects its mass manufacturing capability to its prices at your advantage, while having a principle of maintaining highest level of quality, unique design and technology in its products.





High Speed and Precision

170 m/min

General Features

- Bridge type flying optic laser
- High Speed 170m/min (Simultaneous)
- High Acceleration (X :2G; Y :3G)
- Accuracy: Repetition: ±0.015
  Positioning: ±0.03
- Dynamic and high precision axis with linear motors
- Best cutting result with constant beam path and compensation system which is synchronized with X axis bridge
- Stress relieving process applied to the body after welding process
- High Performance Rigid Aluminum Bridge
- Low Energy and Gas Consumption
- Excellent and compatible system package from FANUC (Laser resonator, controller and linear motors)
- Compact Exchangeable Cartridge for 5"and 7,5"
- Height control with capacitive nozzle sensor
- High Pressure Cutting Head (25bar)
- Ping-Pong Function providing the shortest time for passing one hole to another
- Lantek CAD-CAM Software with full auto-nesting
- Film Burning Feature
- Lasermak Automatic Cutting Technology Tables
- 3 Different Cutting Technology for all Materials and Thicknesses
- Advanced cutting features (Edge, Start-up, Power Control Function)
- Automatic Nesting, Machining, Time and Cost Calculation
- Automatic Loading-Unloading Unit
- Restart and Retrace Function
- 3 Point Reference Sensor
- Auto-Focus Cutting Head
- Part and Scrap Collecting Conveyor
- Reliable High/Low Pressure Assist Gas System (Two proportional valves)
- Automatic Controlled Synchronized Suction System
- Special Filtered Air Dryer System
- Precise Temperature Control for Water Cooling System

Laser Power Source

Fanuc CO_2

The biggest laser resonator manufacturer of the world.

C 1000 i Model A
C 2000 i Model B
C 4000 i Model B
C 5000 i Model A
C 6000 i Model B

General Features

- "Fanuc beam mode" is designed to cut thin and thick sheets in optimum speeds so it will give the lowest damage to the lens and mirrors. Life time for optic components are very long.
- Fanuc resonator uses one type gas mixture. Extremely low gas consumption (10 Lt/hr)
- Advanced alarm circuits
- "Photo-Catalytic Element" removes hydrocarbons to avoid mirror contamination and protects laser power supply units
- Automatic aging, Leak check and warm-up functions reduce maintenance time
- Highest Reliability with Intelligent Technology
- "Nano-machined mirror holders reduce resonator adjustment time after maintenance
- Thanks to the new production technology, maintenance period for turbo blower is 24000 hours

Power of Laser

No Wear on Electrodes

Electrodes are mounted outside of the discharge tubes. The discharge tubes produce the laser beam, therefore there is no contact between electrodes and discharge tubes and as a result there will be no wear on electrodes and could be used for a long time.

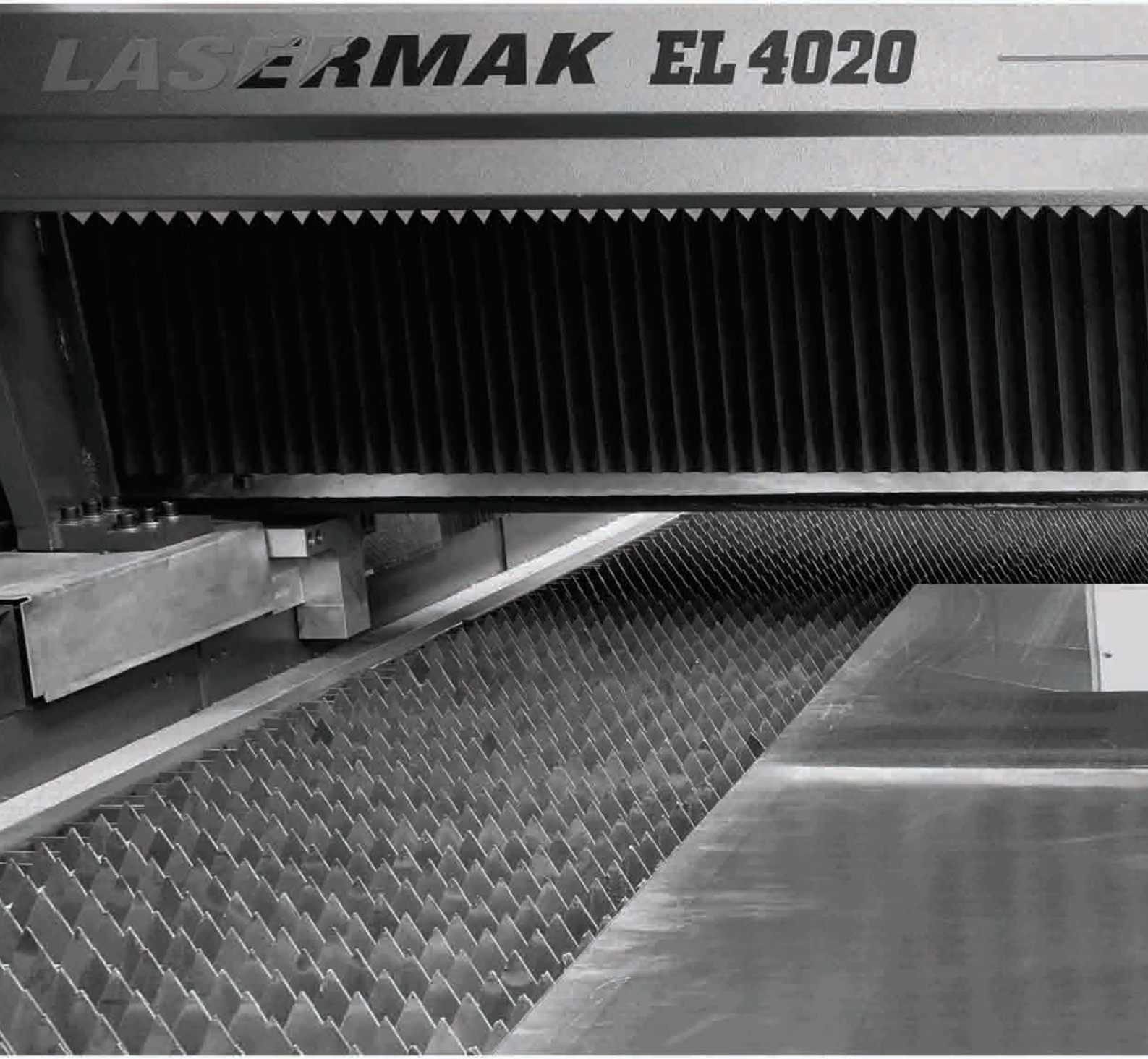
Low Gas Consumption

Compared to DC-Discharge, energy consumption of RF-Discharge technology is considerably lower.

Constant Power Output

Homogenous gas discharge system keeps the laser output power always constant. Laser output power guarantees continuous perfect cutting quality.

- Fanuc Mode is especially designed to achieve the best cutting results over a wide range of thickness.
- Fanuc 4kW has only 6 folding mirrors (Fanuc 2,5 kW has only 3 folding mirrors)
- Fanuc use a modular power supply system (typically 1 PSU per 1 kW Output Power).
- Fanuc Lasers offer latest RF Excitation Technology
- Discharge Circuits of Fanuc Lasers do not need any maintenance
- Highest Maintenance Efficiency.



Precitec HP 1,5" (Z) – HP2" (Z) Lasermatic Cutting Head

- Exchangeable Cartridge System for High Pressure Cutting Applications. The Cartridges which the lens are fixed on are very practical and easy to use. When the thickness is changed it will only take a few minutes to setup the new adjustments for the new cut.
- 3,75" , 5",7.5",10" (with Extension Adaptor) Focal Lengths are provided by two exchangeable cartridges on the Cutting Head
- Effective Lens and Cooling System
- Two Assist Gas Connection
- Compact Exchangeable Cartridge (Dual Focal Lengths) between -18mm and +10mm provides lots of advantages for cutting
- The Cutting Head can be operated at high gas pressure up to 25 bar (2.5MPa)
- Integrated Distance Sensor Control keeps the distance same always between sheet and nozzle
- Error Signals to protect Cutting Head from Collision, Cable Cut and Body Touch

Precitec HP2” M HP 1,5” M Lasermatic Motorized Cutting Head

- Exchangeable Cartridge System for High Pressure Cutting Applications
- Automatic adjustable Lens Position with motorized head
- When sheet thickness or material is changed there is no need to adjust focus length thanks to signals between CNC and motorized head
- Cartridge replacement system enables to replace lens faster
- Electronic Cartridge Detection(only 2˝ Cutting Head)
- Integration of PS130-Sensors and Preamplifier into the cutting head (optional)
- Laser crack sensor warns the operator about the cracks in the sensors (Standard for 1,5” M)

Shuttle Table

- Automatic or manually controllable dual shuttle table technology provides continuous production
- Lasermak integrated clamping system gives the best solution to fix thin sheets to the shuttle table
- Safety standards according to CE standards.

Conveyor

Conveyor placed under the machine frame carries dropped scraps and dross which is collected into a wheeled scrap box.

Air Drier and Conditioner

Chemical Air dryer and filters are very important and provides protection for the beam path and optical elements against oil, dust and humidity

Machine Frame

- Machine frame was designed with fine element method and with its stress relieved, durable, rigid, mono block construction it will provide the same cutting precision for years.
- Machine frame was designed in one piece so it can be setup up and transported very quickly.
- Safety window panel's surrounding the work area protects the operator and provides a clear view of the cutting process.

Air Drier and Conditioner

Suction System

Independent suction windows are synchronized with the cutting head. The suction window opens according to the cutting head position. Therefore optimal suction is provided to avoid environment pollution.

Suction System

Cooling System

Cooling Water System is designed to cool laser source, Optical Components, Cutting Head and Linear Motors.

- Protection against freezing
- Alarm level and warning messages
- All Material in contact with water are made from stainless steel
- Integrated heating to warm up the water
- Low Noise
- Low energy consumption

Cooling System

Easy control

Control Panel

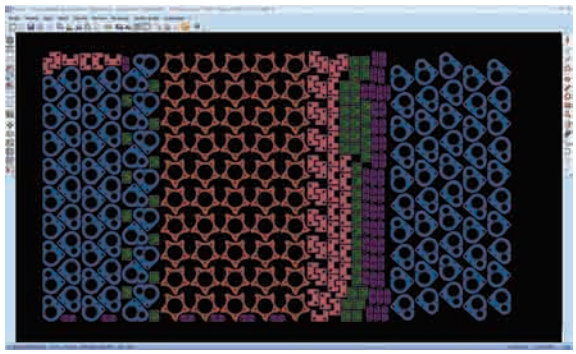
Fanuc 16 i-LB

- Years of joint experience in production for resonator, controller, driver and linear motor. Perfect integration and maximum control
- World's biggest manufacturer for CNC controllers
- 10,4" Color LCD Screen
- 512 KB Part Program Memory
- Ethernet or PCMCI Card Connections
- Programmable high speed for reducing cycle times
- High Speed approaching function
- Easy access for cutting data tables
- Edge, machining and start-up functions
- Integrated Laser Screens
- Control characteristics can be changed by parameter setting
- Ping Pong Function (Hole to Time Really Short)
- Beam Length Compensation
- Restart and Retrace Function
- Display screen for periodic maintenance and alarm history
- Program formation with MDI panel
- Time and cost calculation

CAD/CAM Software

Lantek Expert

Lantek Expert Cut CAD / CAM Software with the Lasermak postprocessor has functions to make the cutting easy with automatic machining and nesting, time/cost calculation, micro - joint, partner cutting. Cutting parameters (cutting, piercing, edge, power control) and technology charts for each part can be written directly into the part program by proprietary Lasermak postprocessor, thus part programs created on Lantek can be transferred and run on the machine without any need for parametrical change on the CNC. Furthermore it has a feature to make a hole with a diameter of 0.5 times sheet thickness and marking.



Easy programming features

- Lantek contains cutting data table for all material types and thicknesses
- Automatic Nesting and Machining
- Time/Cost Calculation
- CAD Module
- Micro-joint feature which keeps the part on the sheet after it's cut
- Common cut feature
- Film Burning
- Automatic Lead-in/Lead-out

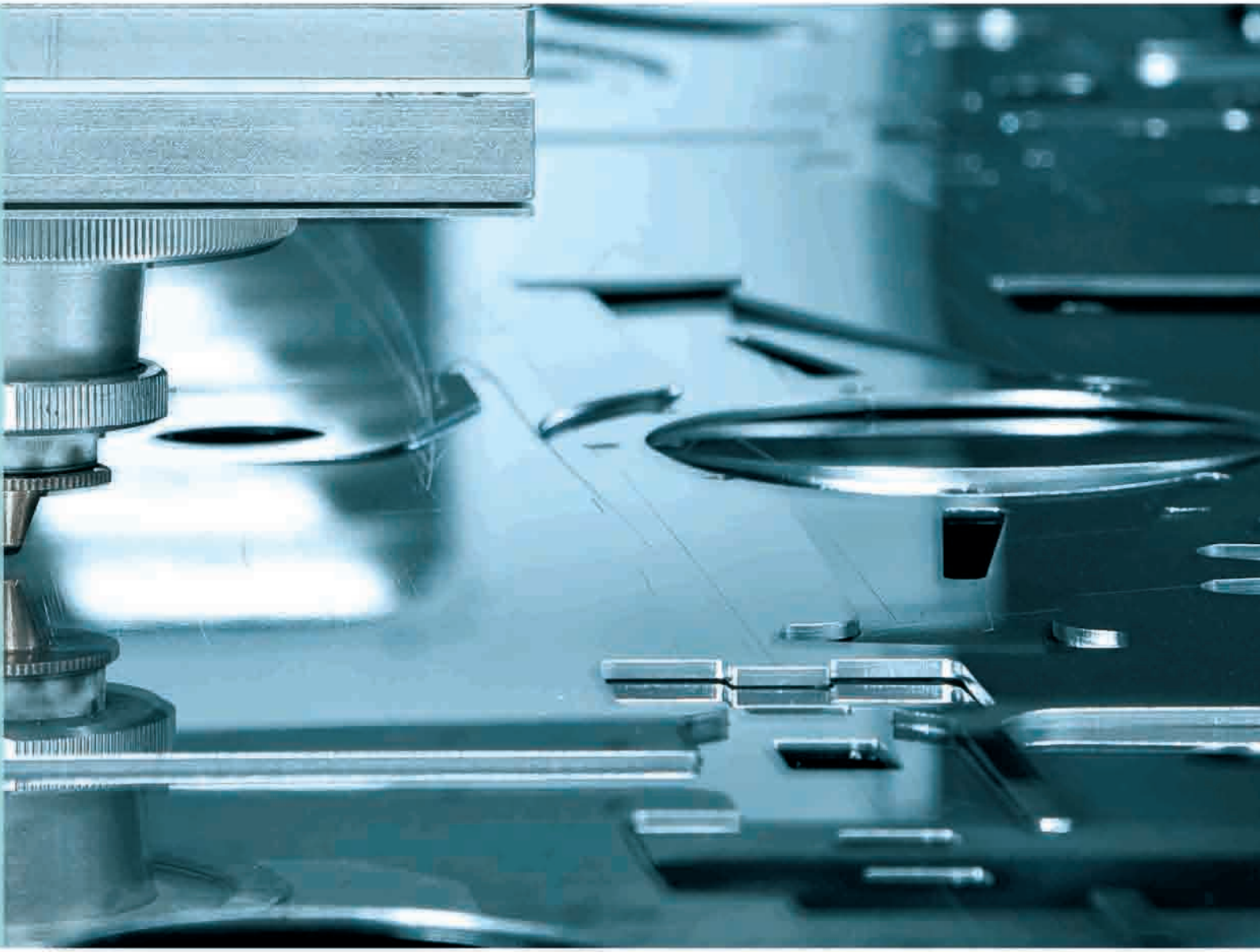
Perfect System for Perfect Cutting

Compansation Axis (V axis)

Best cutting result with constant beam path and compensation system which is synchronized with bridge on X axis. With this feature you will get perfect cutting result on every point of the table.

Standart Equipments

- Machine Frame,5 axes (X,U,Y,V with linear motor- Z axis with servo motor);High Speed Laser Cutting machine
- Chiller Unit, for Laser Source, Linear Motors, Cutting Head and all Optic Components, Equipped with a Special Micron Rated Water Filter.
- CNC Control unit, FANUC 16i-LB 10.4″ LCD Screen, Display Screen for all Laser and Maintenance Functions, program storage with Ethernet and PCMCI Card
- Cutting Head, Precitec HP1.5″ (for 2.5KW); HP2″(for 4KW)
- Exchangeable Cartridge System, Precitec 5″ and 7.5″
- Easy changeable Lens Kit, ZnSe Positive Meniscus Lens
    - 50,8mm Dia*190.5mmFL (7.5″ for 2″ cutting head)- Edge Thickness:9,65mm
    - 50,8mm Dia*127mmFL(5″ for 2″ cutting head)- Edge Thickness:9,65mm
    - 38,1mm Dia*190.5mmFL(7.5″ for 1,5″ cutting head) - Edge Thickness:7,37mm
    - 38,1mm Dia*127mmFL(5″ for 1,5″ cutting head) - Edge Thickness:7,37mm
- Capacitive Approaching controller, Sensitive Distance Control with Precitec EG8010 Adjust Box
- Nozzle Kit,
    - 0.8mm,5pieces
    - 1.0mm,5pieces
    - 1.2mm,5pieces
    - 1.5mm,5pieces
    - 2.0mm,5pieces
    - 2.5mm,5pieces
    - 3.0mm,5pieces
- Optical Mirror Kit, 5 Pieces Folding Mirror
- Cutting Head Ceramic Part Kit, 2 Pieces Ceramic Part
- Beam Path System, Special Beam Path Protective Bellows
- Gas and Air Control, Two Proportional Valve for Pressure Adjustment, Two Sensor to Control High and Low Pressure
- Clean-Dry Air System, Chemical Air-Dryer with Active Carbonized Filter
- Automatic Loading-Unloading Unit
- Sheet Clamps, Four Holder Clamp on every table
- Three Point Reference Sensor and Programming
- Conveyor, Part and Scrap collecting Conveyor
- Warning Lamps
- Lantek CAD-CAM Software
- Machine and Operator Safety System
- PCMCI Flash Memory Card
- Manuals for all Lasermak equipments

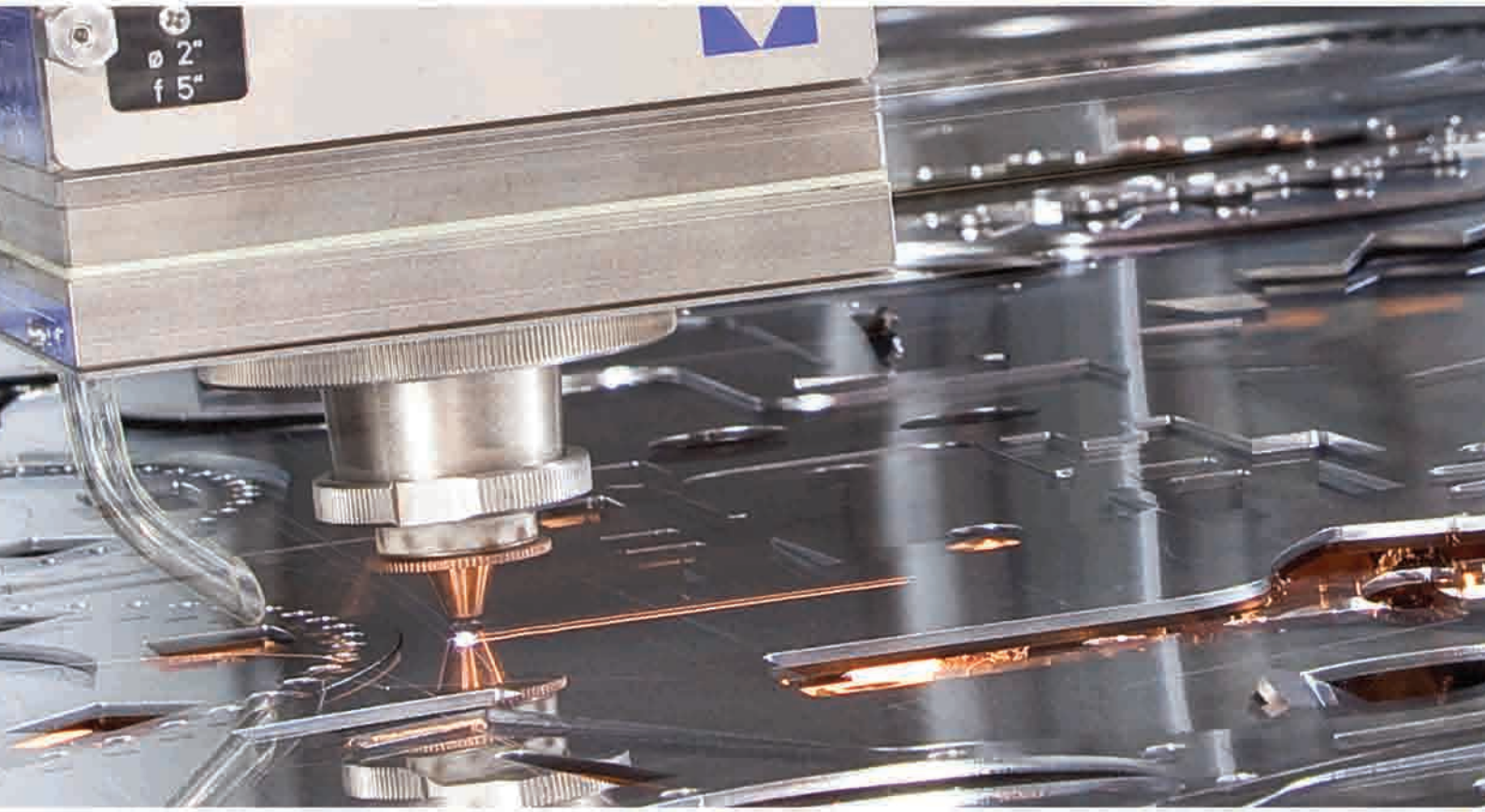


Optional Equipments

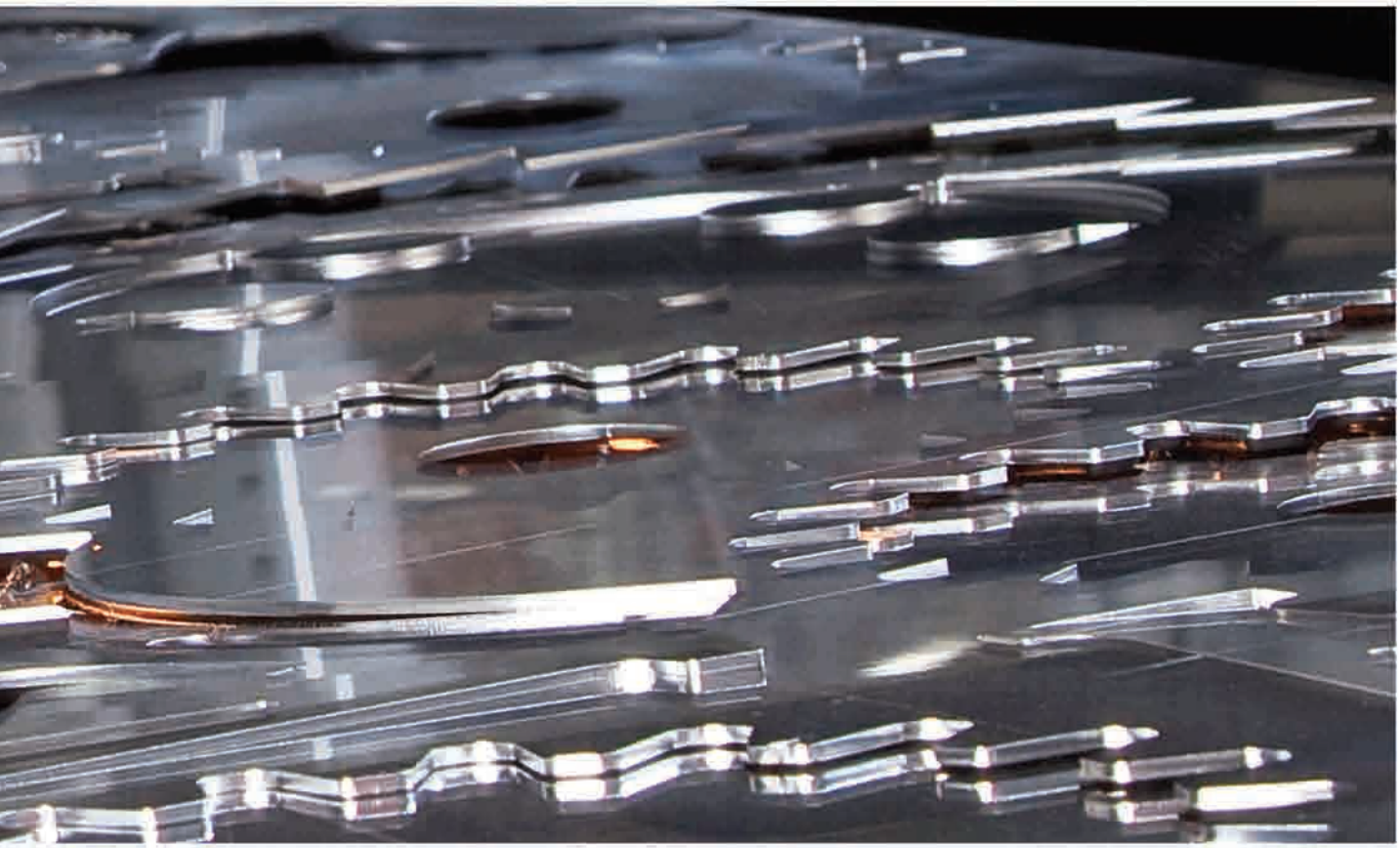
- 3.75″ Cutting Cartridge and 3.75″ Lens (only for 1,5″ Cutting Head)
- 10″ Lens with Extension Adaptor
- Motorized Cutting Head,
  - Precitec HP 1.5″ M(Z)-Integrated Lens Break Sensor
  - Precitec HP 2″ M(Z)
- PS130 Piercing Sensor, Process Module, Includes Lens Break and Piercing Sensors together (only for HP1.5″ HP2″ and HP2″ M(Z))
- Protective glasses aganist LASERMAK Co_2 Laser Beam
- Filter Unit
- LASERMAK Spare Part Kit
  - Ceramic Part – 2 pieces
  - Folding Mirror – 2 pieces
  - 5″ Lens – 2 pieces
  - 7.5″ Lens – 2 pieces
  - 1.0 mm nozzle - 10 pieces
  - 1.2 mm nozzle - 10 pieces
  - 1.5 mm nozzle - 10 pieces
  - 2.0 mm nozzle - 10 pieces
  - 2.5 mm nozzle - 10 pieces
  - 3.0 mm nozzle - 10 pieces

Technical information

			1000.2,5x1,25
RESONATOR		Watt	1000 Watt CO_2-Laser Fanuc C1000i-A, Short Optical path type
MAXIMUM PULSE PEAK POWER		Watt	1200
LASER GAS CONSUMPTION		Liter/hour	10
COOLING WATER FLOW RATE		l/min	40
MAXIMUM WORKSHEET DIMENSIONS		mm	2500 x 1250
CUTTING CAPACITY (High Quality)			
MILD STEEL		mm	8
STAINLESS STEEL		mm	4
ALUMINUM		mm	3
MAXIMUM WEIGHT CAPACITY		kg	500
AXIAL MOVEMENTS			
X, U AXIS	Linear Motorized Table	mm	2560
Y AXIS	Linear Motorized Bridge	mm	1290
Z AXIS	Servo Motorized Cutting Head	mm	100
V AXIS	Linear Mot. Compensation Unit	mm	1875
SHUTTLE TABLE (Automatic Loading - Unloading Unit)		palette	2 (30 sec)
CUTTING HEAD		-	Precitec HP1,5" 25 Bar
CUTTING HEAD FOCAL LENGTHS		inch	5" - 7,5"
TOTAL ELECTRIC POWER NECESSITY		kW	25-40
MACHINE DIMENSIONS (L x W x H)		mm	9280 x 4210 x 2080
MACHINE WEIGHT		kg	16500



	2500.2,5 x 1,25	2500.3 x 1,5	4000.3 x 1,5	4000.4 x 2	4000.6x2
	2500 Watt CO_2-Laser Fanuc C2000i-B, Short Optical path type	2500 Watt CO_2-Laser Fanuc C2000i-B, Short Optical path type	4000 Watt CO_2-Laser Fanuc C4000i-B, Short Optical path type	4000 Watt CO_2-Laser Fanuc C4000i-B, Long Optical path type	4000 Watt CO_2-Laser Fanuc C4000i-B, Long Optical path type
	2700	2700	5000	5000	5000
	10	10	10	10	10
	75	75	160	160	160
	2500 x 1250	3000 x 1500	3000 x 1500	4000 x 2000	6000 x 2000
	16	16	20	20	20
	8	8	12	12	12
	6	6	8	8	8
	1000	1500	1500	2500	4000
	2560	3060	3060	4080	6060
	1290	1540	1540	2040	2040
	100	150	150	150	150
	1875	2250	2250	3000	4000
	2 (30 sec)	2 (35 sec)	2 (35 sec)	2 (45 sec)	2 (65 sec)
	Precitec HP1,5" 25 Bar	Precitec HP1.5" 25 Bar	Precitec HP 1,5" 25 Bar	Precitec HP2" 25 Bar	Precitec HP2" 25 Bar
	5" - 7,5"	5" - 7,5"	5" - 7,5"	5" - 7,5"	5'' - 7,5''
	50-70	50-70	65-90	65-90	65-90
	9280 x 4760 x 2080	10470 x 5285 x 2430	10470 x 5285 x 2430	13510 x 5805 x 2430	18820 x 5805 x 2280
	16500	20800	21000	30750	36000



	4000.6x2,5	6000.3x1,5	6000.4 x 2	6000.6x2
	4000 Watt CO_2-Laser Fanuc C4000i-B, Long Optical path type	6000 Watt CO_2-Laser Fanuc C6000i- MODEL B	6000 Watt CO_2-Lazer Fanuc C6000i- MODEL B	6000 Watt CO_2-Lazer GE Fanuc C6000i- MODEL B
	5000	7000	7000	7000
	10	20	20	20
	160	250	250	250
	6000 x 2500	3000 x 1500	4000 x 2000	6000 x 2000
	20	25	25	25
	12	15	15	15
	8	12	12	12
	5000	2000	3200	5000
	6060	3060	4080	6060
	2540	1540	2060	2040
	150	150	150	150
	4250	2250	3000	4000
	2 (65 sec)	2 (35 sec)	2 (45 sec)	2 (65 sec)
	Precitec HP2" 25 Bar	Precitec HP2" 25 Bar	Precitec HP2" 25 Bar	Precitec HP2" 25 Bar
	5'' - 7,5''	5'' - 7,5'' - 10'	5" - 7,5"	5'' – 7,5'' – 10''
	65-90	100-120	100-120	100-120
	18820 x 6305 x 2280	10480 x 6485 x 2040	13510 x 5805 x 2430	18820 x 7005 x 2280
	39000	20200	30750	36500

Common Features

RF – EXCITATION		MHz	2
BEAM MODE		-	Fanuc Low Order Mode
PULSE MODE		-	Freq: 5 - 2000Hz Duty: 0 - 100%
POWER STABILITY		%	± 2 - 4 - 6 kW ± 1 - 1 - 2 kW
LASER WAVE LENGTH		µm	10.6
LASER SHUTTER		-	Mechanical safe shutter
LASER GAS COMPOSITION		-	Co_2 / He / N2
CNC CONTROLLER & OPERATOR PANEL		-	Fanuc series 16i-LB "LCD mounted" type CNC with 10,4" color screen, 512kB part program memory and all relevant laser functions, Ethernet
MACHINE AXES		-	5-Axis [X, Y, Z, U (X2), V]
ACCELERATIONS			
X, U Axis	Lineer Motorized Table	G	2
Y Axis	Lineer Motorized Bridge	G	3
Z Axis	Servo Motorized Cutting Head	G	2
MAXIMUM AXIS VELOCITIES		m/min	170 (simultaneous) (X, Y single axis velocity 120m/min)
POSITIONING ACCURACY		mm	± 0,03
REPETITION ACCURACY		mm	± 0,015
ASSIST GAS			
Assist sensor1	MILD STEEL	-	Oxygen (0,1-6 Bar)
Assist sensor 2	STAINLESS STEEL	-	Nitrojen (0,2-25 Bar)
Assist sensor 3	ALUMINUM	-	Air and Nitrojen (0,2-25 Bar)
CAD/CAM Software		-	Lantek Expert Cut