

Technical Specifications : Model SIL - 3020 FF

Cutting Axes

X Axis	3000 mm
Y Axis	2000 mm
Z Axis	100 mm
Max. Sheet Size	2000x3000 mm
Max. Sheet Weight	1000 kg

Dynamics

X Axis	100 m/min
Y Axis	100 m/min
Synchronous	120 m/min
Acceleration	1.2 g
Positional Accuracy	± 0,05 mm
Repeatability	± 0,02 mm

CONTROL UNIT

Controller	Siemens / Fanuc
Computer	P IV 2 GHz, 40 GB HDD, 15" TFT
OS	Windows XP

LASER SOURCE

Laser Type	Fast Flow CO2 Laser
Output power	1 kW – 8 kW
Power Range	0 – 8 kW
Wavelength	10.6 µm
Frequency	CW to 5 kHz
Gas consumption	5 – 50 lit/hr
Purity of gases	99.5%
Power stability	± 0.5 %
Laser Cutting Head	Precitec (auto focus)
Laser Cutting lenses	1.5", 2.5", 5", 7.5"
Assist gases	O2, N2, Compressed air

Cutting Performance

Mild steel	Up to 40 mm
Stainless Steel	Up to 25 mm
Aluminium	Upto 10 mm

Note: The max. cutting performance depends on the cutting gas quality and the sheet Quality and may vary in fringe ranges

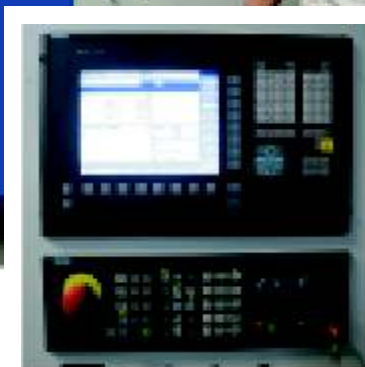
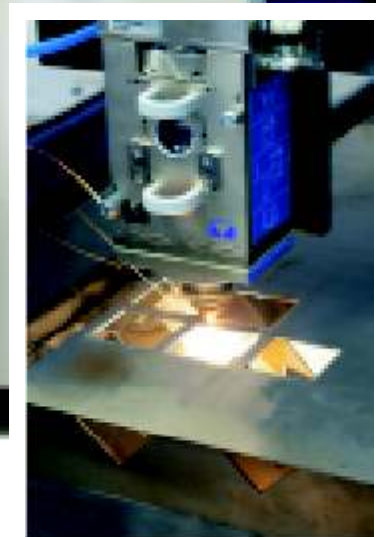


SURESH INDU LASERS PVT. LTD.

Mfg of Laser Marking, Cutting, Engraving, Welding & Cladding Systems

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Cutting Head –

- Integrated non-contact distance control
- 2D cutting
- Cartridge replacement system
- Pre-adjustable focusing optics
- Made of highly corrosion resistant SS
- Error signals in case of collision, cable breakage, exceeding the measuring range

CNC control

The Laser cutting system has both manual & computer automated control capabilities. The CNC controller consists of -

- Colour display OP 12 full function
- Installation for digital drive supply
- Laser power control for ramping
- NC programs standardized with parameter function
- Accessory & wiring plug connectors
- Machine control panel
- Full keyboard panel & Profibus interface to CPU
- PLC and external field bus modules
- PC interface Profibus

We also offer -

- Standard software for Windows with P IV processor, hard disk & floppy drive
- Terminal block for Laser power control

Table

SIL offers table size 2000 mm x 3000 mm x 100 mm. The system is a gantry and a flying optic system. The work piece part is fixed.

Delivery Components

Gantry with x1 / x2/ y

- Gantry system with movable y-axis
- Central lubrication automatic
- Z-axis mounted on y-slide
- Bending mirror housing and beam channel
- Cooling water circuit for external optical components
- 1 proportional valve for cutting gas on y valve

Z-axis

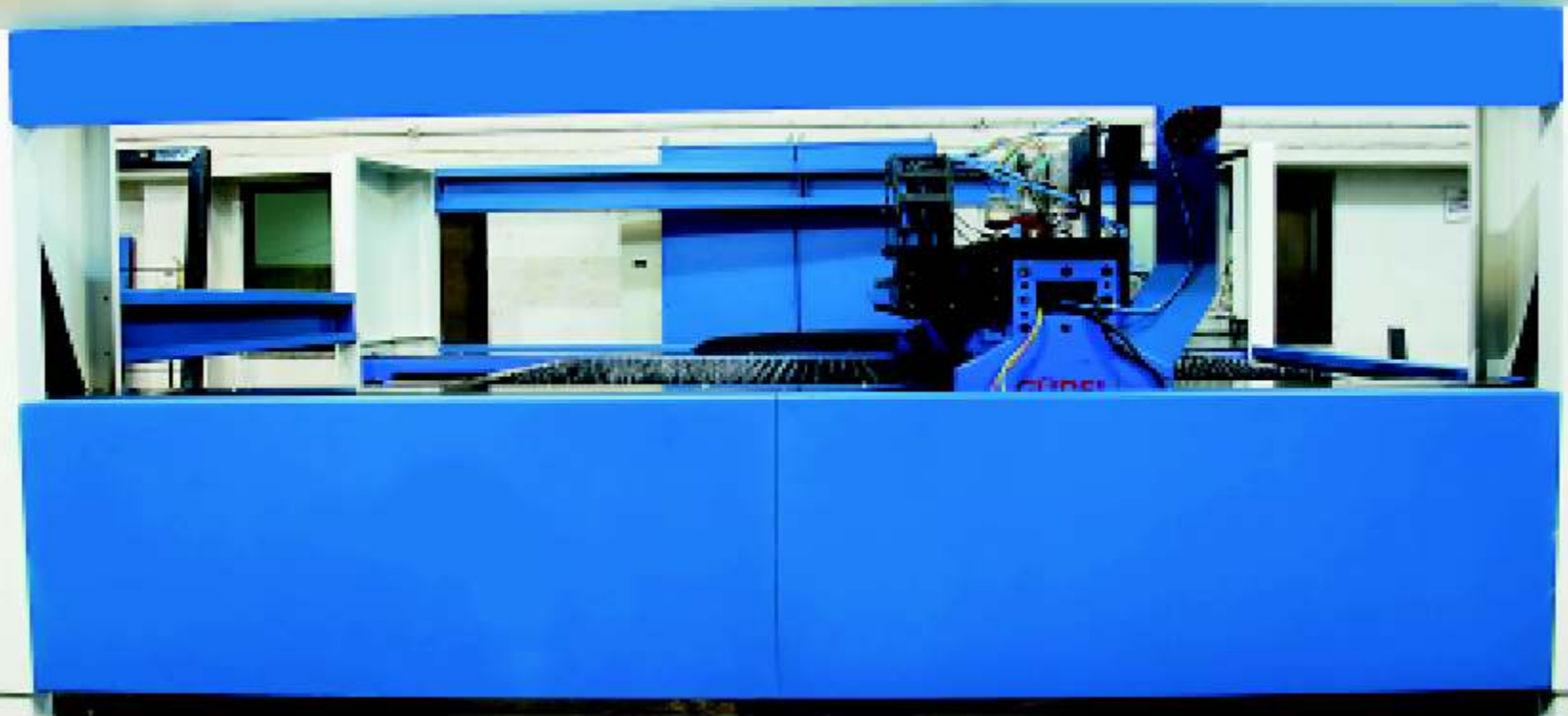
- Cassette system for fast change of focal length
- Lens optic for high pressure, air cooled
- Contact less capacitive distance control
- Sensor high regulation system
- AC servo motor
- 100 mm travel

Base Frame

- Base frame with leveling elements
- Built in two sections for suction of vapor
- Laser adjustment frame

CO₂Laser Cutting System





Indigenous, Reliable, Economic

SIL offers indigenously developed Laser Cutting Systems embedded with world class technology. A highly reliable cutting system is a basic requirement of any industrial environment capable of offering 24x7 uptime. SIL's proven technology guarantees reliability along with exceptional cutting quality & efficiency. Reliability, quality, efficiency deliver lower operating cost & higher return on investment. With the choice of wide Laser power range, SIL's Laser Cutting Systems is most effective & ideal system for those who want to process either in lower thickness or higher thicknesses. Over & above all these features, being indigenously developed this most economical Laser cutting system available in the market.

A winning Team (System) with Star Players (Components)

SIL's Laser Cutting System is a like a winning team having combination of star players. SIL's Laser Cutting System offers star players such as American Laser source, German Cutting head with auto focus, German/Japanese controller, American CAD/CAM software, American optics, German slides, etc. All these star players are bound by India integration excellence from SIL resulting in the winning team with an assurance for a customer to remain on the top vis-à-vis competition.

Turbo Flow Compressor
Turbine is virtually maintenance-free, low speed turbine, and is non-oil lubricated thus elimination any potential for oil contamination of the lasing optics, inherent with the turbines

and tools-type blowers supplied in other lasers. **Modern Resonator Design**
Allows easy removal and reinstallation of internal optics after cleaning without the need for alignment. The output coupler mount has a clean air purge to prevent dust or other contamination from depositing on, and thus damaging the output coupler.

DC excitation
50% more electrically efficient and has a faster pulse rise time (square wave) for faster piercing and more stable cutting than RF excited lasers.

±0.5% laser output power stability
This is in comparison with ±2% stability of other lasers, which improves cutting quality and consistency

Three separate and distinct pulse modes
Gated pulse, Superpulse and Hyperpulse along with the continuous wave (cw) output, provide the broadest range of operating performance and flexibility in processing different material types, thickness and specially coated materials.

Laser diagnostics panel
Aids in pinpointing laser faults due to an interruption in the power, real time power & current readings, cooling water or gas utilities, as well as internal interruption in the laser. It can also be used as a control box for power setting, pulse modes, and laser shutter control.

Low lasing Gas Consumption – Only 50 lits. an hr. Can be used with either premixed or inexpensive and readily available welding grade gas.



CAD CAM

This software is used by people world wide for Laser processing applications and an extremely efficient, easy and intelligent CAD CAM with material management a complete solution for 2d laser cutting machine, from Part designing, importing, nesting, optimization, scrap calculation, cutting time calculation and many more. Some of the important features are -

- Total tool path control
- Import ASCII points as splines as well as points or lines
- Improved algorithm for surface intersection and filleting
- Improved surface handling
- Double precision internal calculations
- Compatible with most CAD systems

Fume Extractor

The Cutting system is designed to extract fumes produced due to laser processing by means of silent blowers attached. Further the air sucked is passed through an air-cleaning unit consisting of various filters to provide environment friendly air at the outlet.

Laser Safety

The safety provisions are provided which are full proof and fail-safe type for the safety of the personnel and the machine. The safety provisions comply with all the relevant international norms/guidelines for safety of the personnel and such laser

equipment. The safety feature include but are not limited to the following:

- a) Laser beam path is completely covered and shielded between the laser unit and the work piece surface on processing station.
- b) Provision for the effective evacuation of fumes from the processing table.
- c) Suitable interlocking arrangement exists against faulty sequence of operation, sudden power failure and fluctuations in the voltage beyond permissible ranges.
- d) Protection against over travel of moving machine subassemblies and subsystems.
- e) Provision of interlocking and clamping for various movements
- f) Provision of an emergency stop.
- g) Protection against voltage fluctuation abnormal spikes and surges and sudden power failure.
- h) Machine does not start automatically on resumption of power supply without ensuring safety stapes.
- i) Protection against overload
- j) Minimum accidental protection

Gas Assist System

Gas assist system is a standard feature for our system. The system consists of nozzles that supplies flow /pressure regulated gas to the point of laser cutting. The system supports the use of inert gases, nitrogen, oxygen, compressed air, etc. during the specific cutting processes.

