LASER CUTTING SOLUTIONS

India's First Registered Laser Machine Manufacturer

SIL®

expertise. innovation. excellence.

About Us

SIL is pioneer in laser technology with 31 years of vast experience in Laser industry, Optics, Electro - Optics & Opto - Mechanical equipments which makes us to manufacture all kind of laser machines for material processing solutions to our customers since 1990.

Dr. Suresh T Shah, an eminent Indian Laser expert who has Designed, Developed and Produced Various Lasers Systems for Industrial and Research Applications Since 1975, has promoted SIL.

Why SIL

- 1st in India to registered as a Laser Machine Manufacturing Company.
- An ISO 9001:2015 certified & CE Mark Certified Company.
- we stands for quality, excellent products, highly efficient processes, and outstanding results.
- Strong and Professional R&D Team since inception.
- Inhouse parts production to precision manufacturing.
- Very well known name in the field of Defense, Aerospace and R & D sector.
- Dedicated R&D Center/Application Lab for new developments in Pune.

Where We Focus

We provides manufacturing solutions to the various Industries and its Applications for

· Automotive	. Sheet Metal Processing	. Defence & Aerospace
. Machine Tools	. Electrical & Electronics	. Print & Packaging
. Medical & Pharmaceuticals	. Signage & Gifting	. Interior & Constructions
. Die - Mould	. Railways	. Jewellery & many more...

Our Range of Products

- **Laser Cutting Solutions**
  - Metal Sheet Cutting
  - Metal Tube Cutting
  - Robotic Metal Cutting
- **Laser Welding Solutions**
  - Fiber Laser Welding
  - QCW/CW Laser Welding
  - Nd: Yag Laser Welding
  - Robotic Laser Welding
- **Laser Precision Cutting Solutions**
- **Laser Cleaning Solutions**
- **Laser Cladding Solutions**
- **Laser Marking Solutions**
  - Fiber Laser Marking
  - CO2 Laser Marking
  - Textile Laser Marking
- **Laser Engraving - Cutting Solutions**

Explore US

Laser Micro Machining System

Fiber Laser Cutting Machine FLEXI Series

Fiber Laser Cutting Machine PRO Series

Fiber Laser Pipe Cutting Machine

Fiber Laser Sheet - Pipe Cutting Machine

Robotic Laser Cutting Machine

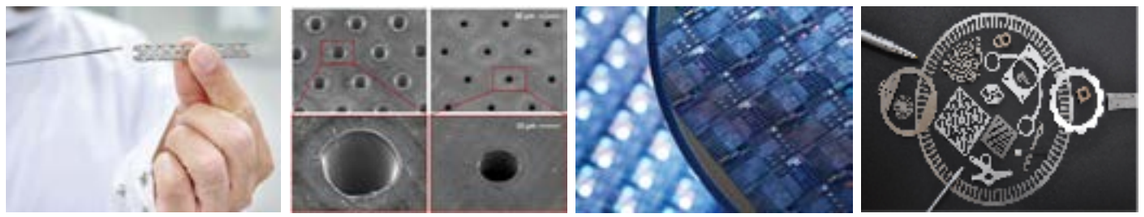
Fiber Laser Cutting - Welding Station

Laser Micro Machining System

Features:

- QCW Fiber, Nano Second, Pico Second, Femto Second, UV, IR or G types of laser sources used as per application.
- Closed loop CNC controller with two interpolated axis expandable to 6 Axis interpolation.
- Closed loop scanner for sub - micron machining of precision parts.
- Best suitable materials for Metals, Silicon, Gallium Arsenide, Ceramics, Glass, Polymers and more (As per application).
- Accuracy up to 10 microns for 100 mm travel.
- Special air bearing slides for higher accuracies.
- Add rotary axis for micro tube machining.
- Add trepanning for micro hole drilling from 0.25 mm to lower & up to 1 mm.
- Maximum work size is 600 x 300 mm.
- Zero backslash up to 50 mm zero bbackslash. Custom size available.
- Linear acceleration up to 2.5 G.
- Resolution up to ≤ ± 0.0001 mm.
- Weight is approximately 7000 Kg.

Samples:



FLEXI Series

Metal processing is the fastest growing industry globally, Our **Flexi Series** are more efficient and gives business opportunities in various industries such as Railways, Automobile, Energy, Defense and aerospace, home appliance, Gym Equipment, kitchenware etc. With our machines you can cut Mild Steel, Stainless Steel, Coated Stainless Steel, and High-Strength steel, Aluminium, Brass, Nickel and other ferrous & non-ferrous alloys easily.

This machine perfectly suits to produce million parts of metal processing industry from low to high volume requirements of the customers. This machine is the blend of economy and performance.

Features:

- Durable Rack-and-Pinion motion system.
- Light weight Gantry for high dynamics with synchronized dual servo motors.
- Auto Focus Cutting Head.
- Machine dynamics 200 holes / min.
- Fireproof bellow for safety.
- Dust proof gas line for gas flow.
- Back panel with Climate Control AC for electronics.
- Isolated HV protected control panel specially build to work in unfavorable electrical conditions.
- Top drag chain concept making machine compact and more safe.

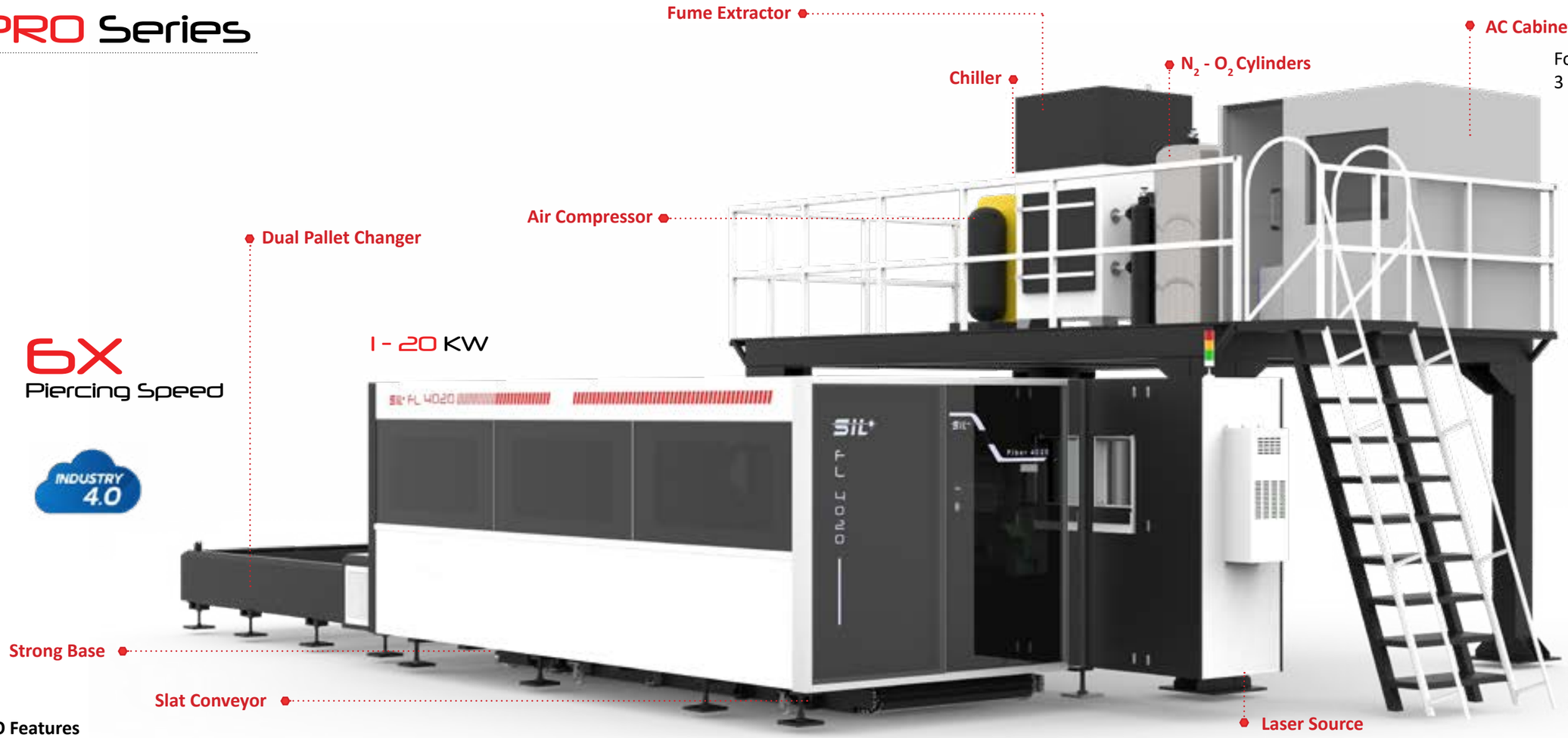
Item	Specifications
Laser Source	IPG / SIL OEM
Motor X	3050 mm SIL Brand
Motor X^{I}	3050 mm SIL Brand
Motor Y	1520 mm SIL Brand
Z Axis	150 mm
Z Axis with Dual Pallet	220 mm
Cutting Head	Raytools Manual / Auto-Focus
CNC Controller	ECAT / Bechhoff
Rack & Pinion	SIL Brand
Electronic Pressure Regulator	30 Bar SMC
Gas Line & Filter	SMC
Gearbox	SIL Brand
LM Rails X, Y	SIL Brand
Chiller	Tongfie / SIL Brand
Acceleration	0.8 G
Position Accuracy	≤ ± 0.05 mm / m
Repositioning Accuracy	≤ ± 0.03 mm
Maximum Rapid Speed	80 meters / min
Cutting Speed	20 meters / min

Materials to Cut:

Stainless Steel
Mild steel
Carbon Steel
Aluminium
Brass

Samples:

PRO Series



PRO Features

- New integrated design incorporating CNC control panel, laser source with the machine.
- Machines up to 3 KW shipped with Laser Source integrated to the machine.
- SIL machines with ECAT technology are IOT 4.0 ready.
- 6x speed piercing feature for faster production.
- Remote access and pre-alert of maintenance and health of machine reduces downtime of machine.
- Three Vision Cameras helps to monitors the cutting process, pallet exchange and operator console.
- Sheet clamping mechanism secures the sheet while cutting process.
- Two stage capacitive detect gives sheet angle precision detect and adjust nested sheet accordingly.
- Collision problem prevention camera with special CNC advanced controllers option with anti crash detection and high speed Z Axis retraction on no sheet underneath or nozzle touch.
- QR code scanning system to controller helps to retract right parts and design to be loaded and avoid mistakes and errors from machine operator. Production process controlled as per the QR code of the sheet to be processed.
- Six zone fume extractor.
- Machine compatible with Nesting softwares from Sigmanest ,Lantek and Metallix.
- Auto Calibration.
- Sheet Auto Detection - Drop Hole Error.
- Touch Capacitance.
- Dual Pallet exchange speed less than 18 Seconds.
- Auto Nozzle Exchanger (Optional).
- Auto Nozzle Cleaner (Optional).
- Nozzle Beam Centring (Optional).
- Slat Conveyor (Optional).

Our Technical Partners:

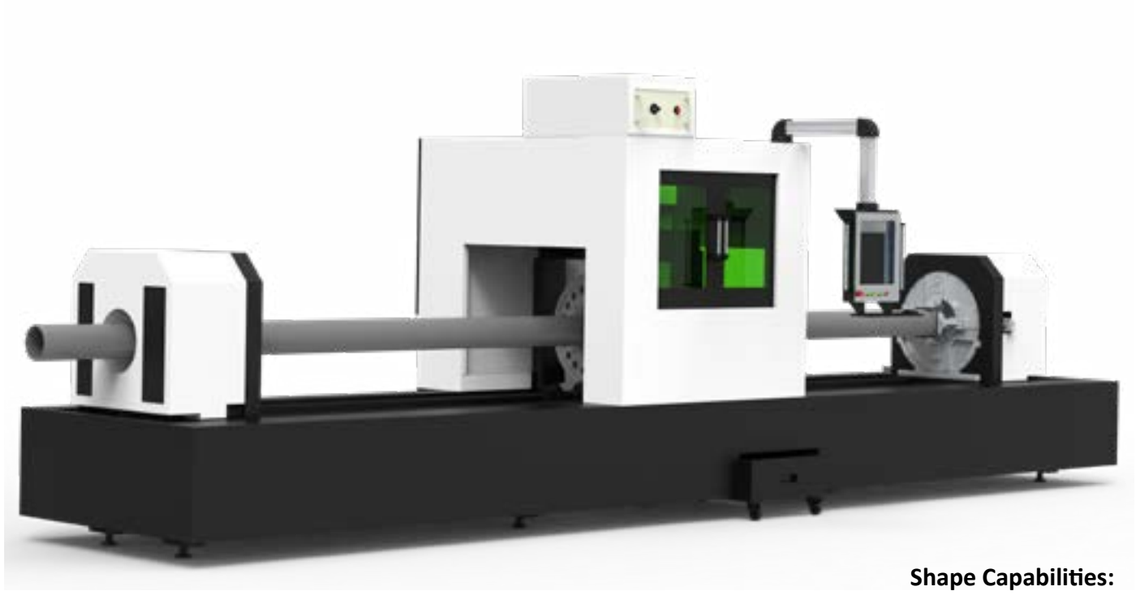
IPG PHOTONICS · EtherCAT · FANUC · RAYTOOLS.PL · PRECITEC · BECKHOFF

Specifications

MODEL	F-Pro 3015	F-Pro 4020	F-Pro 4025	F-Pro 6020	F-Pro 6525	F-Pro 8020
Working Area	3000 x 1500	4000 x 2000	4000 x 2500	6000 x 2000	6500 x 2500	8000 x 2000
Laser Power Source (IPG, FANUC,SIL OEM)	1-20 KW					
Positioning Accuracy	≤ ± 0.05 mm / m					
Repositioning Accuracy	≤ ± 0.02 mm					
Maximum Rapid Speed	120 - 180 m / min *					
Maximum Acceleration	1.5 - 2.5 G *					
Controller	SILCUT 2.0 - ECAT / Beckhoff / Fanuc					

* 180 m / min rapid and 2.5 G of acceleration with FANUC & Beckhoff hardware.

Fiber Laser Pipe Cutting Machine - 3 Chuck



Features:

- Hollow Mid and Front Chucks.
- Auto clamping mechanism.
- Third Chuck Option of Hollow/Holding type.
- Depending on Chuck, pipe maximum diameter selection of 320 mm, 220 mm, 160 mm.
- We have both 2 Chuck and 3 Chuck options.
- Full length of pipe will be processed in 3 Chuck cutting machine without wastage.
- Tube cutting available in sizes of 3000 / 6000 / 9000 mm length.

Shape Capabilities:

- Square
- Round
- Oval
- Peanut-shaped
- Angle iron
- D-shaped
- Hexagon
- Rectangle

Materials	2 KW	3 KW
Stainless Steel (N2)	06 mm	08 mm
Carbon Steel (O2)	10 mm	10 mm
Aluminum (N2)	06 mm	08 mm

Items	Specifications
Laser Source	IPG / SIL OEM
Laser Power	2-6 KW
X/Y Speed	100 m / min
Rotary Diameter	160/220/320 mm
Cutting range	3000/6000 mm
X Axis Stroke	400 mm
Y Axis Stroke	3000/6000/9000 mm
Z Axis Stroke	220 mm
Positioning Accuracy	≤±0.05 mm
Max Idle Speed	60 m/mm
Repositioning Accuracy	≤±0.05 mm
Power	380/50 V/Hz
Cutting Acceleration	0.5 G
Controller	Cypcut
Weight	3500 Kg

Fiber Laser Sheet - Pipe Cutting Machine

Metal Sheet – Pipe Fiber Laser Cutting Machine is an example of high-tech flexibility 3D Axis cutting. The system blends beam - modulation technology to automatically match material thickness with the power and speed of a rotary index to efficiently transition from flat sheet to tube or pipe cutting. This switch between flat-sheet cutting and tube or pipe cutting is accomplished in less than 2 min., and the system's ability to process round, square, rectangle, C-channel and angle iron provides users with extreme versatility.

Items	Specifications
Laser Source	IPG / SIL OEM
Laser Power (Watt)	1 - 6 KW
Maximum sheet size X, Y	3000*1500 mm
Pipe Cutting Y axis	3000 mm
Travel Method	X, Y, and Z - Axis movement for Cutting Head
Control Method	X, Y and Z (Simultaneous 3 - Axis Control)
Drive Motors	Yaskawa or Panasonic AC Servo Motors
Max. Axis Positioning Speed (X, Y)	80 m/min. per Axis (>120 m / min - 45 degree)
X, Y Axis Positioning Accuracy	**≤±0.03 mm**
Repositioning Accuracy	**≤±0.05 mm**
Power Supply	380/50 V/Hz, 3-Phase
Machine Control	FSCut
Machine Weight	7000 Kg








Robotic Laser Cutting Machine

Robotic Laser Cutting Machine mainly used in 3D precision cutting of aviation, automobile industry, construction machinery, mould, fitness equipment and sheet metal processing, etc.,

Flexible laser manufacturing system is made up of advanced international fiber laser, 6 - Axis industrial robot and control system. It meets well the demand of quenching, tempering, normalizing, alloying, cladding etc.,

This 3D robot laser cutting machine is specially for cutting metals such as carbon steel,stainless steel, mild steel, brass, aluminum, etc.,

Features:

- Free movement with greater reach at 270 degree angle.
- Advanced Laser cutting head with auto focusing.
- Suitable to Edge cutting of Hydro formed parts of Automobiles.
- Auto tracking system.
- Expert in 3D Cutting with arbitrary curve.
- 6 - axis mechanical arm gives four times more output.
- Stable and reliable light path system and control system.
- Imported original fiber laser generator with great and stable.
- performance,lifespan is over 100,000 hours.
- High cutting quality and efficiency with cutting speed up to 25m/min and beautiful,smooth cutting edge.
- High performance reducer,gear and rack;Guide rail and ball screw to guarantee.

Fiber Laser Cutting - Welding Station

Features:

Our innovative SCW 2.5X25 automatic laser cutting and welding system to produce side walls and roofs for its passenger wagons. This is a sheet cut and weld system designed and customised by SIL as per client's specifications. SCW stands for "Sheet Cut and Weld", 2.5 indicates the maximum weld length, 25 m indicates the maximum welded sheet length that the system can be handle. The machine produces semi-finished parts which is used for manufacturing railway coach sidewalls and roofs including windows and doors of the coaches.

SCW 2.5X25 machine consist of Cutting and Welding base table with gantry and dual Z - Axis of cutting and welding, Machine Enclosure, Control panel, Chiller, Fume Extractor, Raw Sheet Loading Table and finally Sheet rolling table. The sheets are rolled out automatically from trimming - welding station and cutting station with the help of two rollers at both side of station which will sandwich the sheet and move the sheets towards sheet rolling table. This operation is done be servo motors due which we can get the exact position of the sheet without any error.

Machine designs and specifications will subjective to change without prior notice

SIL®
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