



TiTAN Series
HIGH POWER FIBER LASER CUTTING SYSTEM



***Ti**TAN Series*

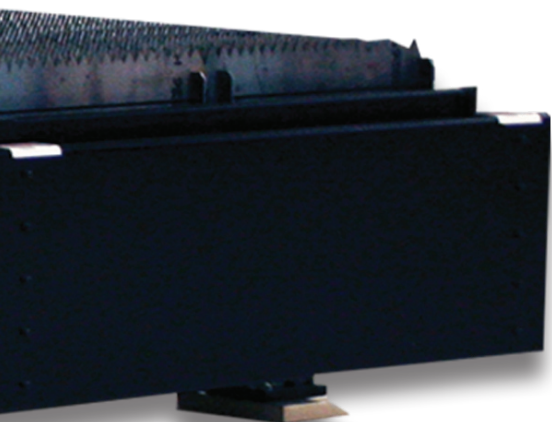
The **Ti**TAN Series High Power Fiber Laser Cutting System is designed to consistently meet the high demands of the metal fabricating industry. The **Ti**TAN Series fiber laser cutting system is an entirely new state of the art design combining the latest developments in motion engineering, PC based CNC control and fiber laser technologies. It is the most advanced, industrial grade, fiber laser cutting and engraving system available on the market.

TECHNOLOGY MAKES THE DIFFERENCE IN PERFORMANCE

- Equipped with the latest in High Power Fiber Laser Technology
- Fiber optic beam delivery system
- CleanCut Technology
- Most advanced PC based CNC control with dual touch-screen user interface and complete network capabilities

The **Ti**TAN Series standard design was developed to ensure the most accurate cutting capabilities, while maintaining the industry's most energy efficient footprint. The **Ti**TAN Series Cutting System was engineered with a user-friendly CNC control interface to ease transition from existing CO₂ systems and for manufacturing plants first introducing laser systems into their processes.

THE *Ti*TAN Series CUTTING SYSTEM MOVES MANUFACTURING PLANTS INTO THE FUTURE WITH PRECISION PROCESSING AND AUTOMATION.



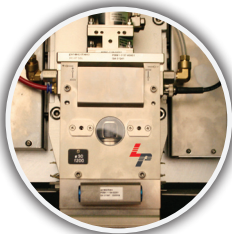
STANDARD FEATURES

**Diode Pointer**

Red aiming beam for visual alignment.

**Laser Cutting Head**

The Titan arrives standard with a top performance laser cutting head for high accuracy and throughput.

**Optical Cartridge (Non-Contact)**

The optical cartridge allows for fast replacement of focal lenses, minimizing service downtime and increasing productivity. It is recommended that additional cartridges be obtained for reduced downtime during servicing.





Control Terminal

The **TiTAN Series** arrives standard with a PC/NC base control with a conversational graphical screen and an extra large 15" [381mm] TFT color display. Designed with three standard USB ports and one RJ45 LAN connection for networking capabilities.



Single Pallet Shuttle System (Motorized)

The **TiTAN Series** comes standard with a 4' x 8' [1.2m x 2.4m], 5' x 10' [1.5m x 3m] or 6.5' x 13.12' [2m x 4m] motorized single pallet shuttle system.



Laser Safety Starter Kit

Includes:

- Optical cartridge tool change kit
- Lens cleaning kit
- Protection goggles



System Manuals

All necessary system manuals are included for use and maintenance of the system

Operating & Maintenance Manual

- Programming Manual
- Electrical Manual
- Parts Manual



OPTIONAL FEATURES*

*Please contact a sales representative for any additional options



Multi-axis Cutting Head

Five axis cutting head for specialized applications.



Electronic Control Gas Pressure Regulator (ECGPR)

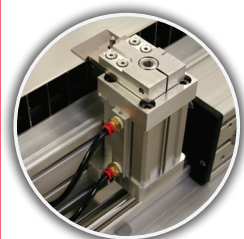
Electronic Control Gas Pressure Regulator for ease of preset pressure depending on the type and thickness of materials to be processed.

Ultrasonic Materials Sensor

Ultrasonic materials sensor determines the presence of materials in the working area and prevents misfiring of the laser.

Automatic Focus Height Sensing Unit

Capacitor or ultrasonic sensors are available depending on material requirements.



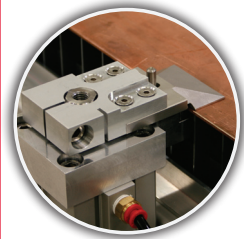
Corner Detector

Device is used to assist the loading and unloading system to position material in correct work area position.



Table Slats

- Knife Edges on 2" Center
- Knife Edges on 1" Center



Worksheet Clamps

Pneumatic clamps are used to hold material in place while processing.



Dual "Pass Thru"

Dual: Automatic dual pallet for loading and unloading during cutting operations.

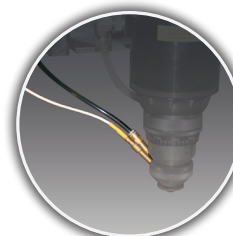


OPTIONAL FEATURES (cont.)



Class I Laser Safety Enclosure

The surrounding enclosure of the laser cutting system used to filter the fiber laser-generated scattered optical radiation. It offers protection to operators and personnel in the area who are not wearing protective goggles and clothing from the diffused laser light during cutting operations.



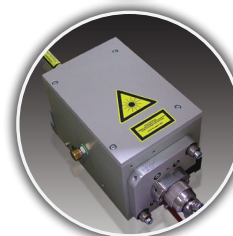
Side Air Blow Unit

The side air blow unit contains dual directed nozzles to re-direct anti-spatter compounds with high pressure air to keep particles off the material, lens and nozzle during high speed piercing operations.



External Exhaust System

Laser Photonics offers a dust collection system manufactured to remove large particles from the exhaust with washable static filters.



Fiber Coupler

Enclosed fiber coupler / optical switch.

Chip Removal

Gathers chips, slugs, scraps and small parts from the machine for the ease of cleanliness and discard.

Air Compressor

Laser Photonics offers an air compressor to provide compressed air to the laser machine. Air is utilized to operate pneumatic cylinders, and provides the medium for the external beam path.

Material Cutting Library Data Base (requires Autofocus and ECGPR)

Data base Library to recall cutting different types of materials and thickness.

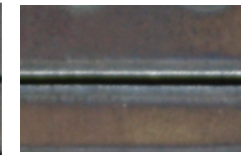
LASER SOURCE

Cleanest Cut in the Industry

Laser Photonics' new technology produces the highest quality cutting surface in the industry. This new technology eliminates the discoloration caused by conventional laser cutting methods while delivering the lowest Heat Affected Zone (HAZ) available. This new beam technology streamlines/slims cutting widths to the next thinnest level by producing intricate cuts up to .1mm and is perfect for all reflective metals 1" and below.



LP cut
(Lowest HAZ)

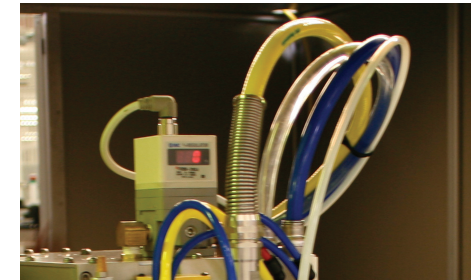


Conventional cut
(High HAZ)



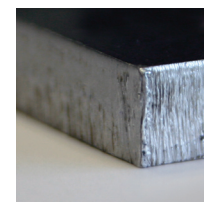
Simple Beam Delivery

The **TiTAN Series** uses Fiber Optic Beam Delivery, which is a state of the art technology to ensure the most consistent beam path. Conventional methods are complicated using articulated arms and CNC beam length compensation which cause different cutting qualities in different areas of the work table and requires aligning of the optics. Laser Photonics' Fiber Optic Beam Delivery contains no moving parts in the beam path which guarantees consistent cutting conditions over the entire work area.



Burn Elimination

CleanCut Technology uses state of the art technology which eliminates burns caused by the laser around corners during cutting. This confirms a perfect cut and the highest quality edges in the industry especially on highly reflective materials including aluminum, copper, bronze and steel. This is due to Laser Synchronized Output (LSO), which is a new digital beam pulsing method.



LP Fiber Laser
Cut Edge



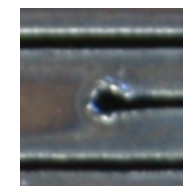
Conventional CO₂ Laser
Cut Edge

TurboPiercing

TurboPiercing Technology comes standard on all **TITAN Series** systems. This new technology guarantees the fastest and most consistent piercing speeds available. Unlike conventional methods, TurboPiercing technology completes an accurate hole eliminating any unnecessary craters in the material.



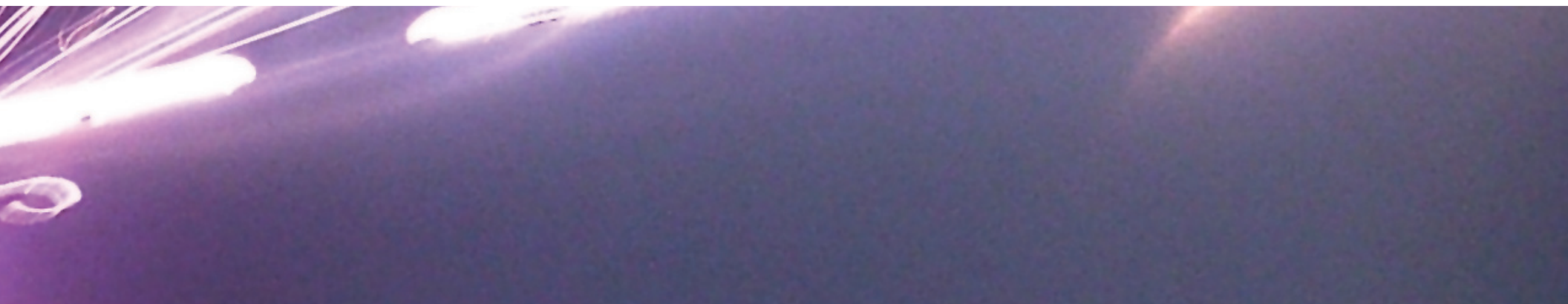
LP TurboPiercing™



Conventional method

Plasma Shield Technology

Plasma Shield Technology allows for the most precise restriction of plasma generation while transitioning from straight line cuts to corners. Conventional CO₂ lasers cut a deformed edge while maneuvering corners resulting in an inferior cutting quality and minimizing production acceptance. Plasma Shield™ Technology combats plasma generation by regulating the acceleration speed while maintaining superior quality and production throughput.



PROPRIETARY MOTION CONTROL SYSTEM

Laser Photonics introduces a new generation motion control system on X, Y, and Z axes. Laser Photonics' motion system offers the highest level of accuracy and precision at high speeds on the market. This system allows for one touch operation and virtually maintenance free requirements. Motion generation and synchronization are centralized at the PC, motion execution is decentralized at the drives. Laser Photonics' software operates on any standard desktop or industrial PC. The **TiTAN Series** utilizes the software for coupling the vision module with the motion system that coordinates the laser and all interaction between the software and the machine control hardware.

High Performance Processing Cutting Head

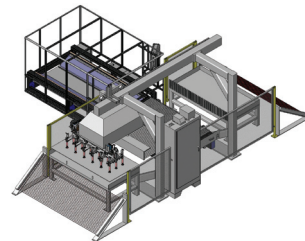
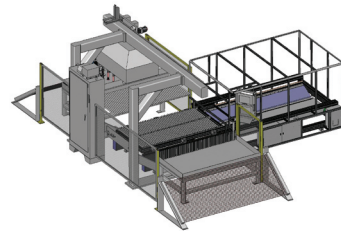
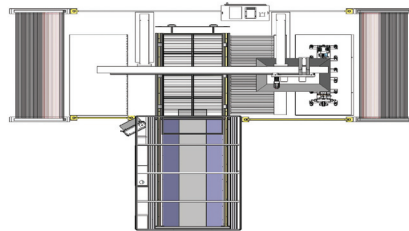
- Auto Focus Height Sensing Unit
- Optical Cartridges in 5" [127mm], 7.5" [190.5mm] and 10.0" [254mm]
- 5 axis cutting head option
- Electronic Control Gas Pressure Regulator



FLEX LOAD AUTOMATION

FLEX LOAD Automation Single or Dual Pallet Gantry Loading/Unloading system is an expandable high-production material transporter. The system will provide automatic loading of 4' x 8' [1.2m x 2.4m], 5' x 10' [1.5m x 3m] or 6.5' x 13.12' [2m x 4m] sheets onto the laser, and automatic unloading of the cut product and scrap from the laser table. One work table is provided for storage of the raw sheet stock, and a second work table/box collects the cut material.

- Meets all industrial material weight standards
- Dual load stations allow for multiple material processing
- Guaranteed precision motion control



FLEX LOAD

Un-loader-Vacuum (1 Table)

Automatic controls allow "hands off" loading and unloading of the laser table. The system is configured to handle sheet sizes from 4' x 8' [1.2m x 2.4m] up to 6.5' x 13.12' [2m x 4m] and thickness from 0.030" [0.762mm] up to 1" [25.4mm].

FLEX LOAD DUO

Un-loader-Vacuum/Rakes (2 Tables)

FLEX LOAD™ DUO includes a rake for small parts handling. System allows faster throughput by positioning material in the laser working area while unloading onto a second table.



INVEST IN YOUR FUTURE

Laser cutting systems are a large investment for any company. Manufacturers must consider not only the initial cost but the yearly expenses associated with maintenance and energy consumption. It is important for every company to ensure they will receive the best ROI from their purchase. The **TiTAN Series** assures the best quality performance with the lowest yearly maintenance and operation expenses.

- Virtually Maintenance Free
- Low Power Consumption
- Easily upgradable
- Eco-Friendly
- Multiple Systems Utilizing One Laser Source

Virtually Maintenance Free

The **TiTAN Series** is virtually maintenance free resulting in less downtime and more production time. Yearly maintenance costs are the number one concern for laser cutting users.

Low Power Consumption

As energy costs rise and manufacturers put more efforts into becoming environmentally friendly, high power fiber laser systems for cutting are becoming the system of choice. When compared to conventional CO₂, new high power fiber laser systems are around 20 times more efficient when it comes to power consumption. This is a significant savings when added up annually and can have a large impact on a manufacturer's bottom line.

Easily Upgraded

The **TiTAN Series** High Power Fiber Laser Cutting System is the only laser cutting system that will allow your machine to grow with your demand and business. This technology allows for the integration of higher kilowatts of increased power without the need to purchase a new system.

Eco-Friendly

The **TiTAN Series** Cutting System allows for the implementation of lean manufacturing and the advantage of green manufacturing. The system uses less power consumption than conventional laser systems and requires no consumables which makes a major impact on yearly expenses.

Multiple Systems Utilizing One Laser Source

The latest in fiber laser technology also allows for the ability to make your manufacturing process more automated with the addition of multiple systems using the same fiber laser source. This enables a user to add additional cutting machines, welding robots etc., without the cost of a new laser source.

CUSTOMER SUPPORT

These support and maintenance services are offered on an annual basis in one of two ways:

- An optional service for those products which are supplied on payment of a one-time fee
- Part of an annually licensed service contract

Laser Photonics offers a variety of customer service tools from training and field service to technical support and engineering, with a single goal of providing all the necessary tools to compliment Laser Photonics' customer needs. The company's reputation in customer care has been proven through numerous repeat orders from satisfied customers, references, testimonials and awards received by Laser Photonics for its consistently exceptional response to the market.



SAFETY CONSIDERATIONS DURING OPERATION

1064 nm wavelength laser light emitted from this laser system is invisible and may be harmful to the human eye. Proper laser safety eyewear must be worn during operation.

21 CFR 1040.10 Compliance

This product is a Class 1 laser as designated by the CDRH and MEETS the full requirements for a stand-alone laser system as defined by 21 CFR 1040.10 under the Radiation Control for Health and Safety Act of 1968. As an added level of security, a redundantly switched safety interlock system helps prevent accidental exposure to excess laser radiation. Plus, the system is equipped with an electrical power manual reset, a key-locked laser power switch and a remote interlock connector. Finally, the system has visible emission indicators with five (5) second emission delay settings. All these features, in combination, constitute the laser radiation safety system, which allows the equipment to be used in a safe and secure manner.

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**AVOID EXPOSURE
INVISIBLE LASER RADIATION
IS EMITTED FROM THIS APERTURE**



PROFILE

Laser Photonics is the industry leader in manufacturing High-tech world class Fiber and CO₂ laser equipment for automotive, aerospace, medical, electronics, defense, semiconductor and flat panel display markets. The applications cover laser cutting, scribing, dicing, singulation, UID marking and engraving. Laser Photonics holds several worldwide licenses for innovative and 'unique to the industry' laser products and technologies.

The product line, introduced by Laser Photonics, demonstrates significant advancements over existing technologies in Fiber Laser applications, laser material processing, UID, direct parts marking applications and laser based deep engraving. These advancements translate into numerous cost and performance benefits to the end users of Laser Photonics equipment.

Laser Photonics products are less expensive, higher in quality, simpler in operation and more efficient than other comparable products on the market making them more attainable. Hundreds of small and mid sized companies who were not previously able to acquire laser equipment because of high cost and complicated operation, are now investing in products.

PRODUCT LINE:



Markstar™ Pro

PORTABLE HANDHELD LASER MARKING SYSTEM



LaserTower™ Series

PROFESSIONAL AND INDUSTRIAL LASER ENGRAVING AND MARKING SYSTEMS



Cleantech™ Series

LASER CLEANING SYSTEMS



Robotic Laser System

CUTTING, CLEANING, MARKING & ENGRAVING

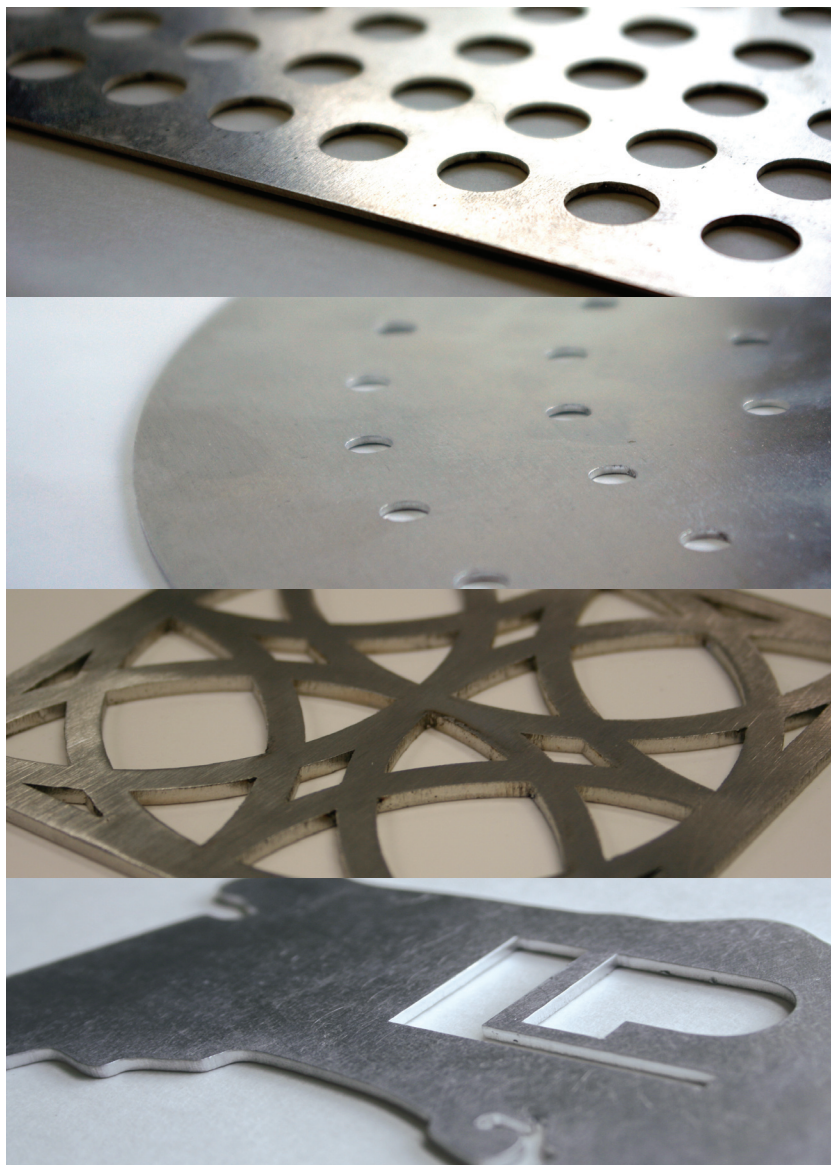


LaserCutting Series

PROFESSIONAL AND INDUSTRIAL LASER CUTTING SYSTEMS



BulletMaster™

TiTAN Series CUTTING APPLICATIONS**LASER PHOTONICS - TiTAN Series SPECIFICATIONS**

ITEMS		SPECIFICATIONS		
MODEL NAME		TITAN 48	TITAN 510	TITAN 2X4
Type		Flat Bed		
Max. Cutting Size		1270 mm x 2489 mm	1524 mm x 3048 mm	2000 mm x 4000 mm
		(50" x 98")	(60" x 120")	(78.74" x 157.48")
Machine Table Height		838 mm (33")		
Max. Load Weight		447kg (986 lb)	751kg (1655 lb)	1043kg (2300 lb)
Axis Stroke	X-axis	1295 mm (51")	1549 mm (61")	2025 mm (79.72")
	Y-axis	2514 mm (99")	3073 mm (121")	4025 mm (158.46")
	Z-axis	50.8 mm (2")		
Feed Rate		X, Y: 30 m/min (1200 in/min)		
Rapid Rate		X, Y: 90 m/min (3600 in/min)		
		Z: 3 m/min (120 in/min)		
Positioning Speed		X-Y axis 300 m/min; Z-axis 30 m/min		
Repeatability		X, Y, & Z ± 0.005 mm (0.0002")		
Cutting Head		3-Axis with 100mm lens/ 7.5" focal distance		
Z-axis profiler		Non-Contact		
Drive Feed Method		Direct Drive		
Worksheet Clamps (option)		3 Clamps; 1 Locator		
Worksheet lifter (option)		5 mm (0.20") of lift travel		
Assist Gas Selector		Programmable Selection		
Air Supply (only for machine and when the shop air assisted cutting is used)		0.58 Mpa (85 psi)		
Gas Supply		Max: 2.48 Mpa (360 psi)		
Power Supply		AC, 3 phase, Y 208 V		