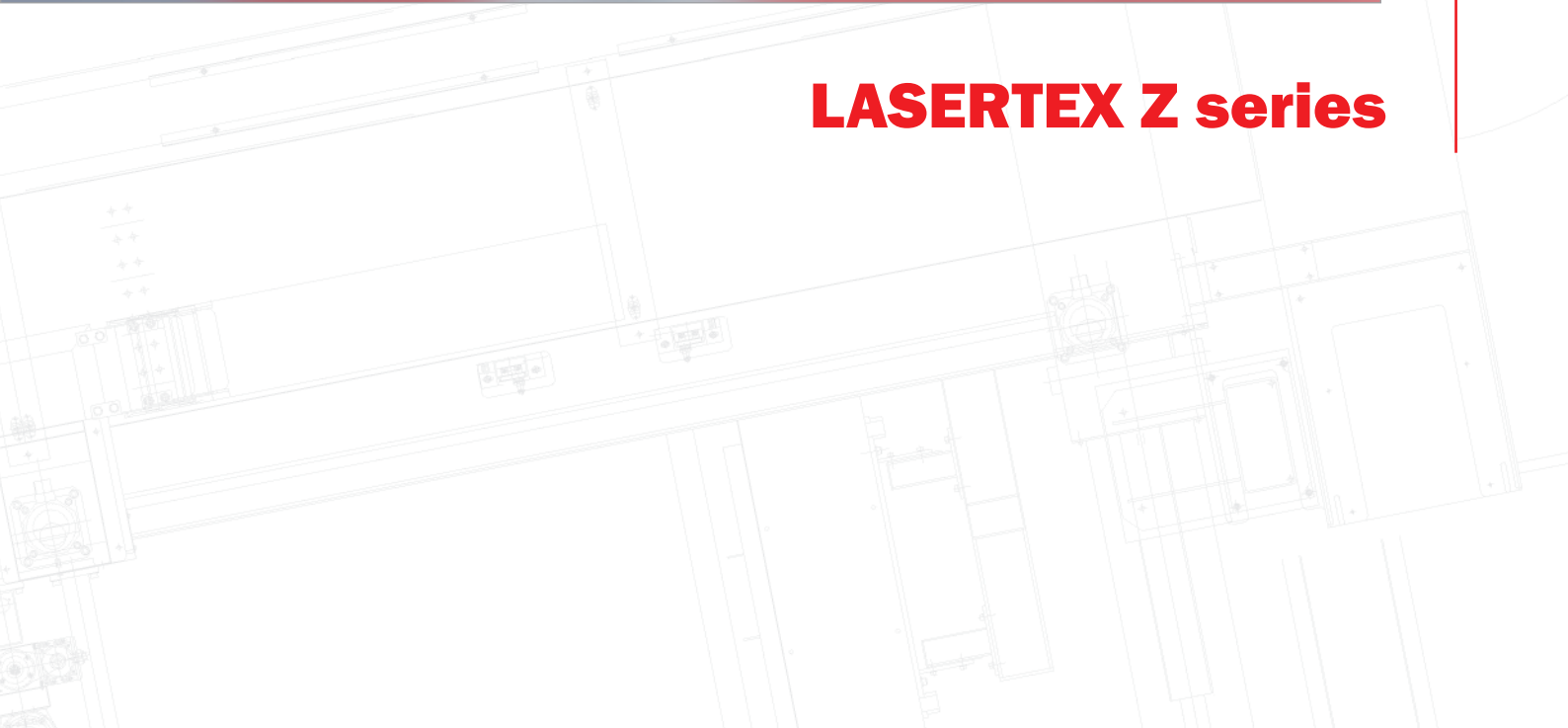




Your cutting needs – achieved.



LASERTEX Z series



The best means of mounting a resonator for carriage-type Laser Cutting Machines

LASERTEX Z series

KOIKE aims at the No.1 laser cutting machine of the gantry type by Zseries!

Zseries effect: Eliminate excessive cost, optimize your production resources.” Increased productivity by +30% (Our comparison.)

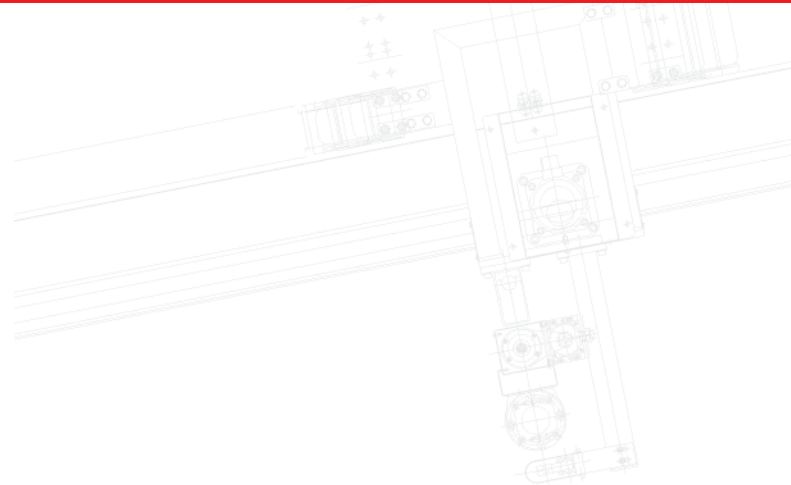
Zseries has improved productivity by reviewing motion and the function.

- New quick piercing (reduced the time from pierce to cut by 25% by improving the movement sequence).
- Improved cutting and micro processing sequence. (Below the half at the micro processing sequence).

Koike, established in 1918, has played a major role in the development of gas powered cutting machines and is considered an industry leader.

Since that time we have taken the lead in developing “plasma” and “laser” powered cutting machines. We have also led in the development and introduction of the NC control and related automatic programming into the marketplace.

Koike has established a total system supplier organization that offers and supports gas cutting, Welding and related equipment to respond to all customers' requirements.



The FANUC resonator mounted on the carriage of the model LASERTEX-20 Zseries

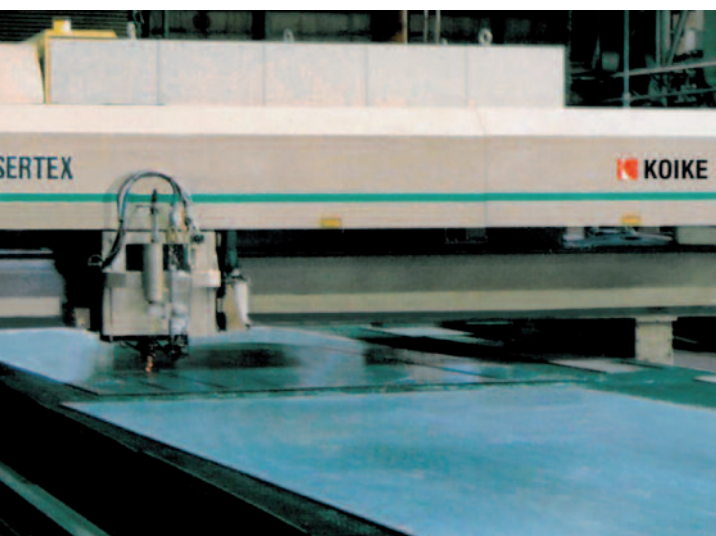


The TRUMPF resonator mounted on the carriage of the model LASERTEX-60TR Zseries





The FANUC resonator mounted on the carriage of the model LASERTEX-40 **Z** series



The FANUC resonator mounted on the carriage of the model LASERTEX-60 **Z** series

The best means of mounting a resonator on the carriage-type Laser Cutting Machines

LASERTEX Z series Σ BOX mounting model

KOIKE offers the best Laser Cutting Machines with Σ BOX (Sigma Box)!

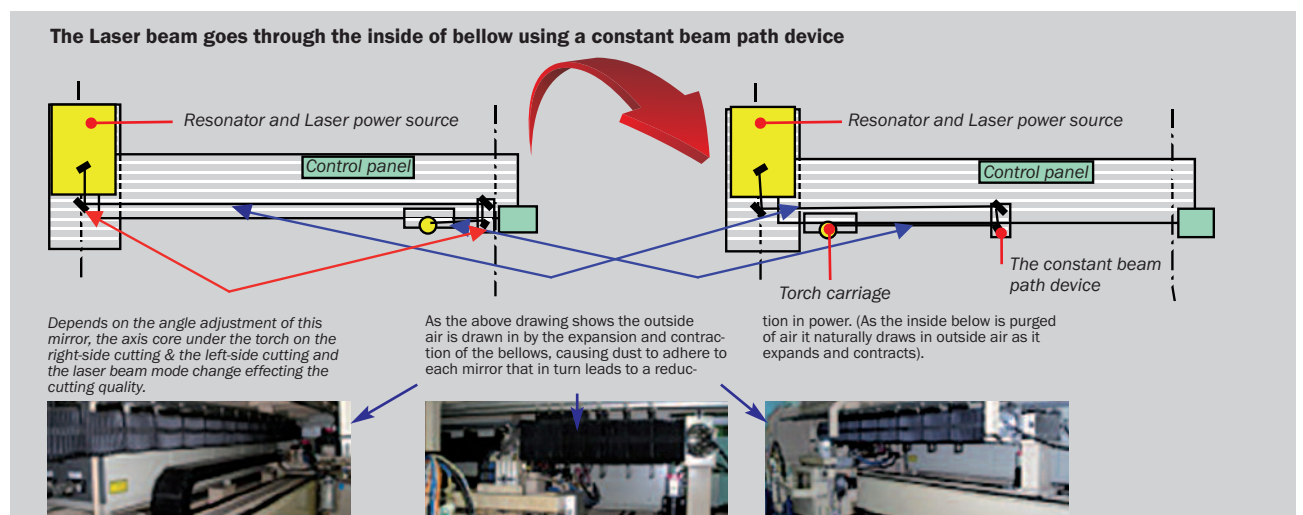


The TRUMPF resonator mounted on the carriage of a model LASERTEX-60TR Z series

Why? Why is the Σ BOX (Sigma Box) resonator mounted on the torch carriage a superior system? What are the deficiencies of the constant beam path device (conventional bellow structure)?

- The bellow hangs down and can be damaged by fire, part interference etc.
- Outside air is brought in as the bellows expand and contract
- Dust adheres to the outside mirror reducing the power and the strength of the beam distribution. (Reduces the heat from the lens.)
- It is difficult to make laser beam adjustments.
- It is difficult and takes longer to do maintenance.
- If the adjustment is wrong, it is possible that there will be a cut quality problem depending on the torch movement.

Conventional Resonator fixed system



LASERTEX Z series

This new design has a low center of gravity and is more rigid and safe. The starting laser cutting accuracy can be maintained for a long time.



Mounting FANUC resonator on the carriage model LASERTEX-40 Z series



The FANUC resonator that is mounted on the carriage of a model LASERTEX-20 Z series

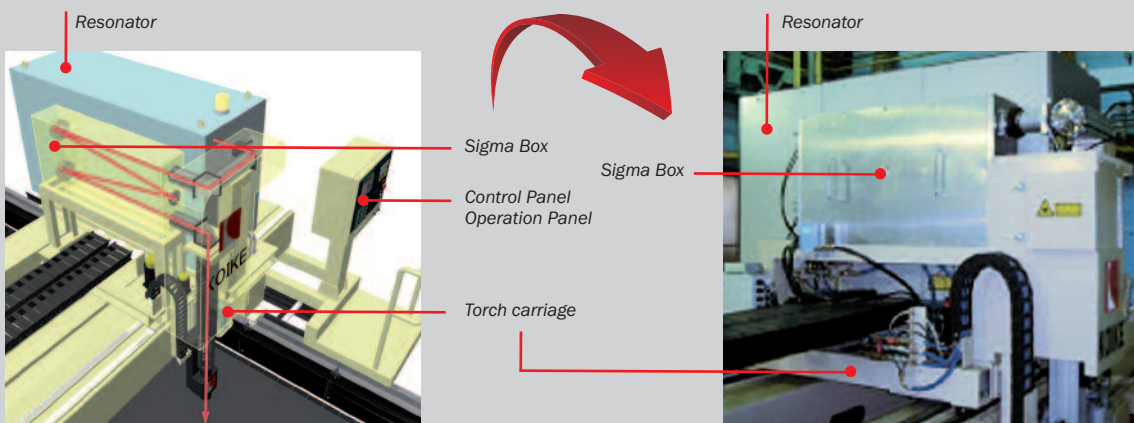
The use of ΣBOX (Sigma Box) eliminates the bellows and their inherent problems and yields a longer, more stable Laser beam.

- Eliminates the bellow structure and its problems and yields a longer, more stable Laser beam.
- As the structure is completely sealed no outside air can enter. Thus preventing dust from adhering to the outside mirror and avoiding power reductions and stabilizing beam strength and cutting quality.

- Can cover a large span (7 M or more). The beam is always fixed yielding the same cutting quality in all areas.
- Eliminates the potential of fire thru hanging bellows.
- Reduces maintenance time and is easier to service.

LASERTEX Z series

The Laser beam is sealed inside of the Sigma Box



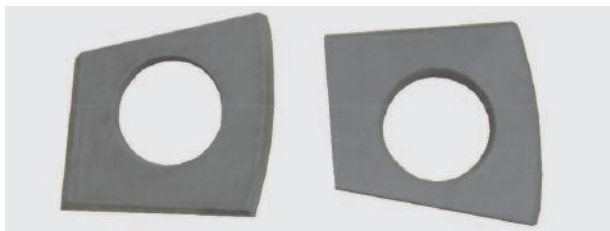
The most powerful CO₂ Laser Cutting Machine yet developed

LASERTEX Z series - 60TR/TRV Z series

Mounting ΣBOX (Sigma Box) Model



LASERTEX-60TR

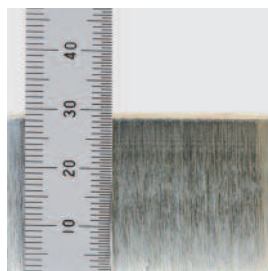


19mm V30

16mm V45



Black mild steel 28mm



SUS304 28mm



Black mild steel 19mm
30-degree bevel

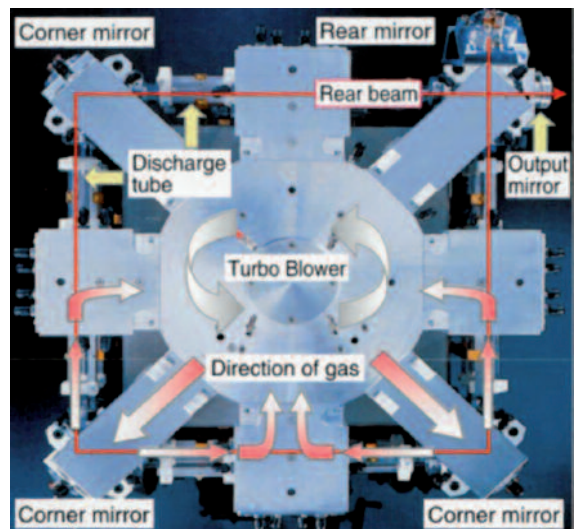


Oil-free turbo blower

- A light weight, compact and strong CO₂ Laser resonator mounted on the carriage with a fixed beam path (an original)
- A stable beam axis, improved cutting capacity, increased long term durability and reduced maintenance (annual maintenance is reduced by approximately 50%).
- A V Bevel Cutting Device option is available.
- Improves cutting performance on medium and thicker plates.
- With the combination of the Σ Box and the Trumpf resonator this machine can maintain the original output of large-size Lasers for a long time. Productivity can be increased by approximately 10%

The features of the TRUMPF Resonator

- A symmetrical aluminum alloy body that allows uniform cooling inside of the resonator and designed to control thermal expansion. Thus there is practically no thermal transformation of the optical axis.
- Light weight and compact, yet very vibration resistant.
- Uses an oil-free magnetic bearing, and a virtually permanent turbo blower (100,000 hours and over); virtually eliminates the need to replace or overhaul. The vacuum pump is also oil-free keeping the Laser gas circuits line clean. Therefore, the maintenance cycle is extremely long (about one year).

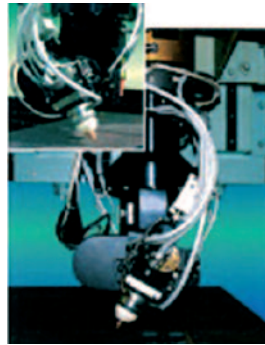


The inside of aluminum alloy resonator

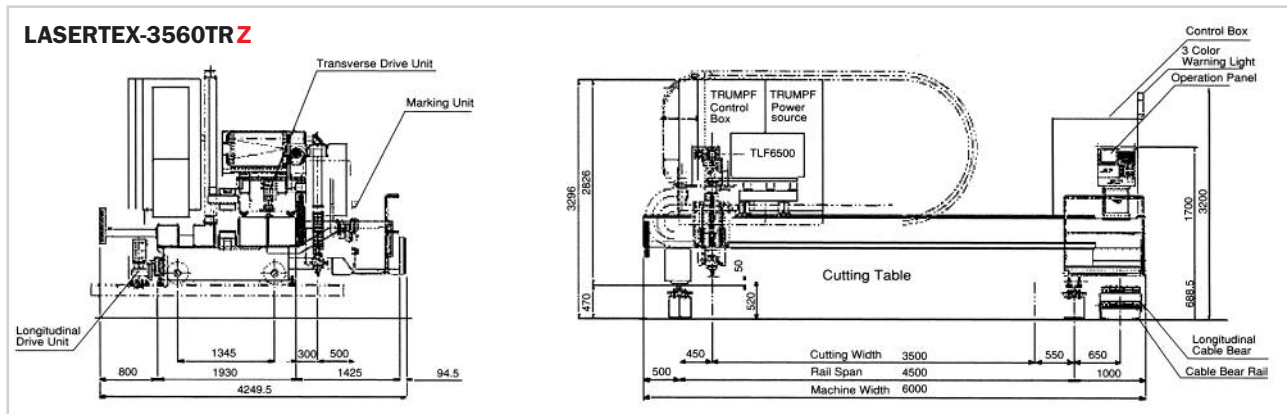
LASERTEX-60TRVZ

The features of the KOIKE Bevel Cutting System

- The rotating unit uses an infinite system. Therefore there are no restrictions in NC programming as there are with gas/plasma cutting machines.
- The bevel unit uses an offset system; the amount of offset is adjusted automatically from the CNC. The bevel unit uses simplified programming.
- An improved AFT nozzle that is well known for producing good cutting and a new nozzle option for I/V Bevel combined use.
- Includes the high-speed auto focus device.
- The torch collision detection (touch sensor with buffer mechanism on the nozzle block base) prevents break age of equipment.
- The plug-in type lens holder makes lens cleaning easy.



Black mild steel 19mm V30°



Machine specifications

Model	LASERTEX-xx60TRZ
Structure	Resonator carriage mounted type
Controller	YSC (Yaskawa Siemens)
Tape Memory	1280, 2560, 5120m
Effective cutting width	Effective cutting width 3.5~5.5m 7m or more (Option)
Effective cutting length	Effective cutting length Maximum 47m
Rapid Speed	Transverse axis: 24m/min Longitudinal axis: 36m/min (Option Longitudinal axis: 54m/min)
Rail Length	Effective cutting length + 3m
Marking Speed	24000mm/min
Cutting setting	Cutting parameter setting function
Cutting capacity	Mild Steel 28mm (25mm)
Straight cut TRZ	Stainless 25mm (20mm)
Cutting capacity	19mm V30° (16mm V 45°)
Bevel torch TRVZ	I-CUT 25mm (22mm)

Resonator Specifications

Type	TRUMPF TLF6000t
System	Resonator & Power supply separated type
Rated power	6000W
Output stability	±2%
Laser wave length	10.6μm
Frequency setting range	310~100kHz
Laser gas consumption volume	20l/h
Cooling flow (Aluminum line)	155l/min or more
Cooling flow (Brass line)	62l/min or more
Input power capacity	82kVA
Power consumption	66kW
Resonator weight	450kg
Power supply weight	1560kg

* the ability of TRUMPF TLF 5000t (5kW)

CO₂ Laser Cutting Machine latest developments FANUC mounting model

LASERTEX Z series

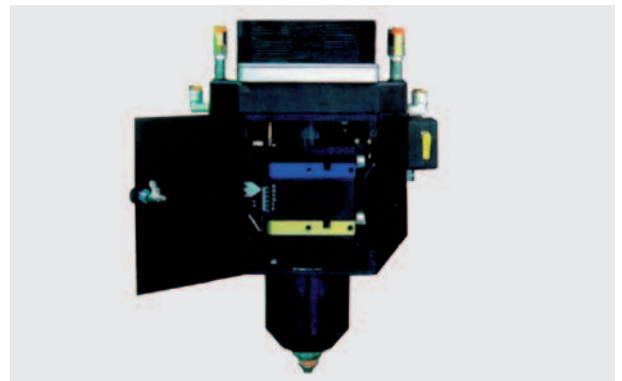
- A compact, high efficient and reliable FANUC CO₂ Laser resonator mounted on the carriage with a fixed beam path (an original).
- This machine is a small, light and simple structure.
- It is easy to operate and maintain. (There is only 3m of unusable space along the longitudinal axis; better than any other laser cutting machine)
- It's standard equipment allows for an unmanned operation to increase productivity and reduce costs.



LASERTEX-20 Z series

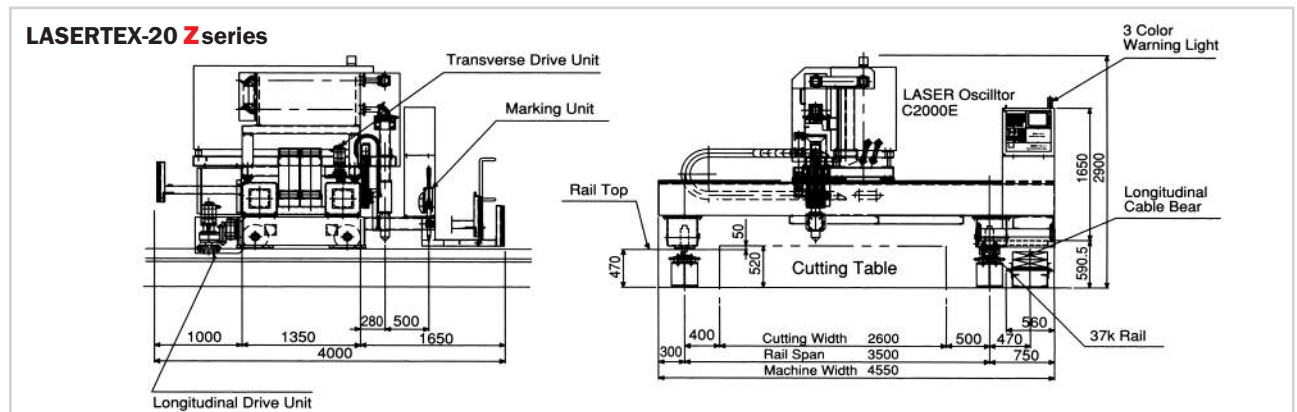
LASERTEX-20 Z series

- Adopted a new type FANUC 2KW resonator
 - The beam quality and power can be improved by improving the composition of the laser gas being used. [changed to (CO₂:He:N₂= 5:60:35) from the conventional laser gas composition of 2KW (CO₂:He:N₂=5:40:55)]
 - You can expect to increase cutting plate thickness and reduce cutting edge roughness by doing the above.
- The torch is located on the inside on all units to improve and stabilize the operation and performance of the machine.
- The height sensor cable is located next to the torch to prevent damage of the sensor cable from an outside force.
- It is possible to replace the focus lens with a single operation.



Torch of LASERTEX-20 Z series

- The auto focus mechanism can be controlled by the NC and the cutting data changes can be made easily
- Eight optical fibers stabilize the sensitivity of the piercing and burning sensors.
- Quick piercing (New function)
 - By using the original dual nozzle for quick piercing you can reduce the total cutting time.



LASERTEX-40 Z series

■ **The new quick piercing function!**

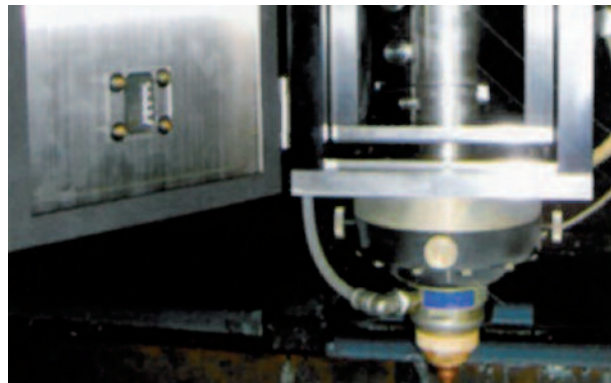
- Improved Software cuts the piercing time in half versus prior systems. (It cuts piercing time by 1/4 versus HSQ piercing.)
- There is a considerable improvement in the cutting of holes and small parts. (It increases productivity by approximately 30%)
- It is equipped with a nozzle to blow and clean spatter.

■ **Introduced a new torch (equipped with a nozzle collision avoidance function.)**

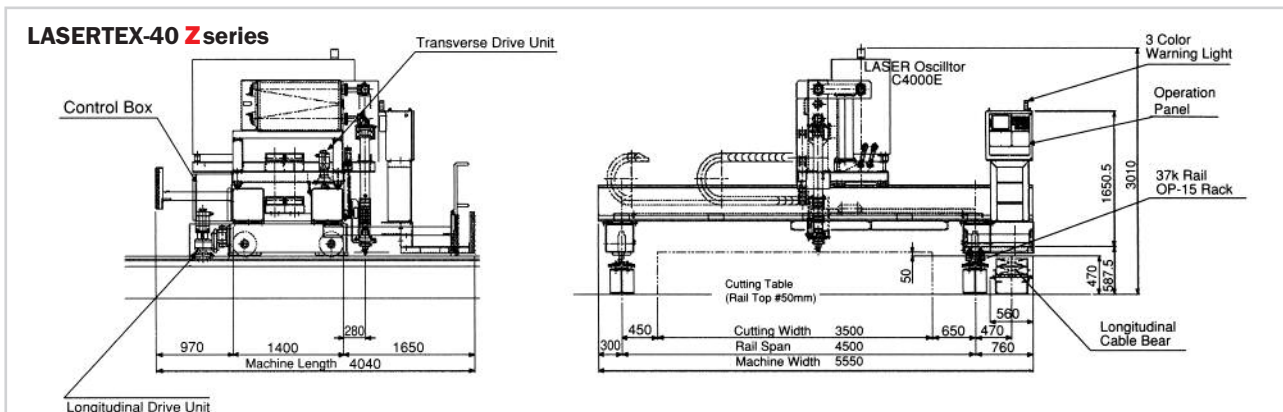
- The focus lens is easily changed in one simple operation.
- The nozzle is protected from damage by the collision avoidance function; thus reducing defective cuts.



LASERTEX-40 Z series



The following models with the new torch. Torch of LASERTEX-40 Z series, Torch of LASERTEX-60 Z series, Torch of LASERTEX-60TR Z series



The largest laser output and machine span for any CO₂ laser cutting machine

LASERTEX-60Zseries

The largest laser output and machine span for any CO₂ laser cutting machine

■ The Automatic initial height sensing function.

• Previously the initial torch height was set manually by using a spacer. This new function eliminates complex manual work and is able to automatically set the initial torch height quickly.

■ HSQ powerful piercing that is used for thick plate piercing. (high speed and high quality) (Patent# 2875626 etc.)

• A fast and high quality piercing method that controls the assist gas pressure, laser parameter, focus point position, and stand off.

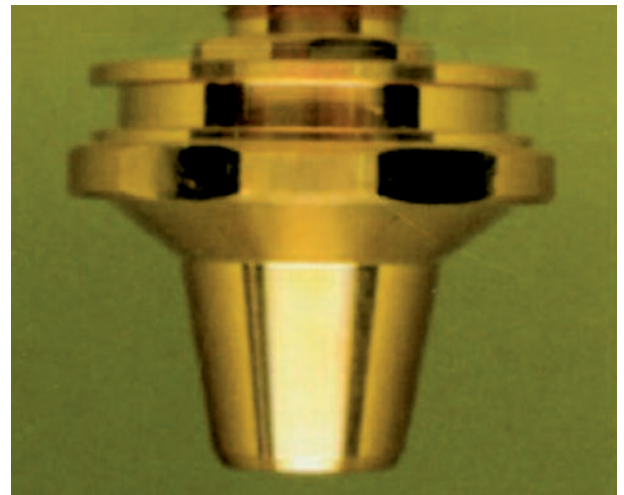
• Using high assist gas pressure and high stand off it eliminates spatters to the nozzle and lens.

■ The new nozzle for quick piercing

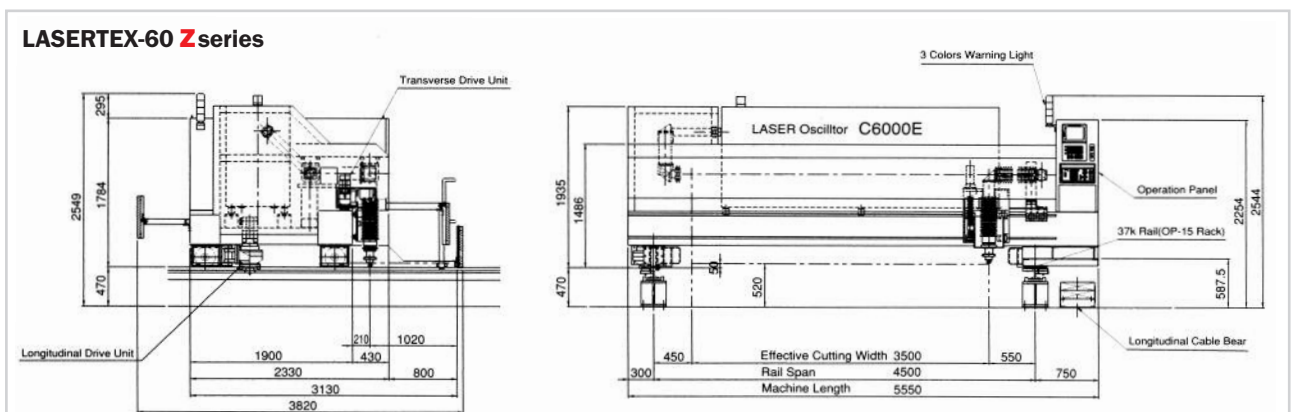
• With our smaller diameter outer nozzle (smaller than our competitor's) high yield nesting is possible by narrowing the distance between parts and parts that have been cut and have to be removed.

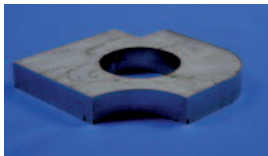


LASERTEX-60 Zseries

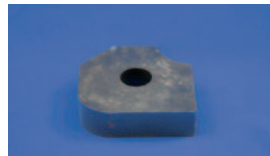


The following models have the new nozzle.
LASERTEX-40 Zseries, LASERTEX-60 Zseries,
LASERTEX-60TR Zseries





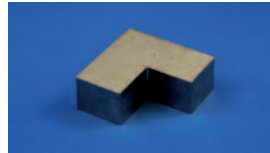
FANUC 4kW Stainless steel 14t



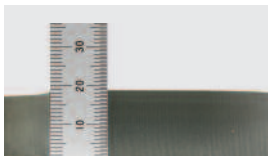
TRUMPF 6kW Mild steel 28t



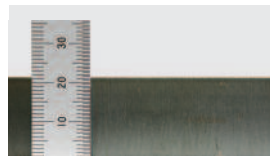
TRUMPF 5kW Mild steel 16t bevel



Black mild steel CW cutting settings



FANUC 2kW Mild steel 19t



FANUC 4kW Mild steel 22t



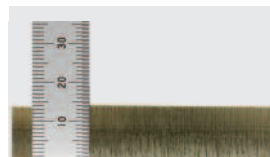
FANUC 6kW Mild steel 25t



TRUMPF 6kW Mild steel 28t



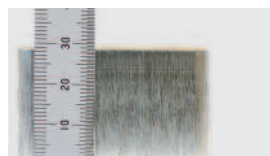
FANUC 2kW Stainless steel 10t



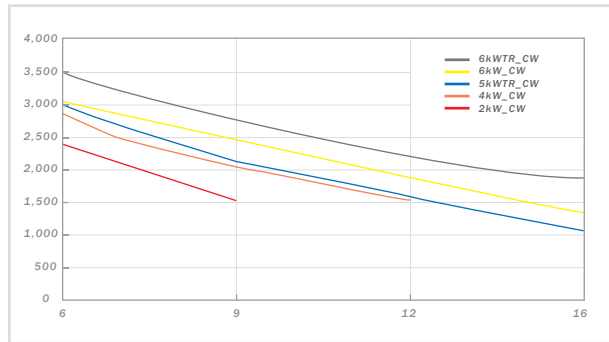
FANUC 4kW Mild steel 14t



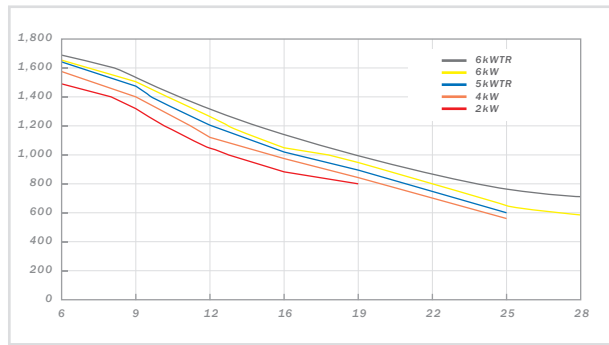
FANUC 6kW Stainless steel 25t



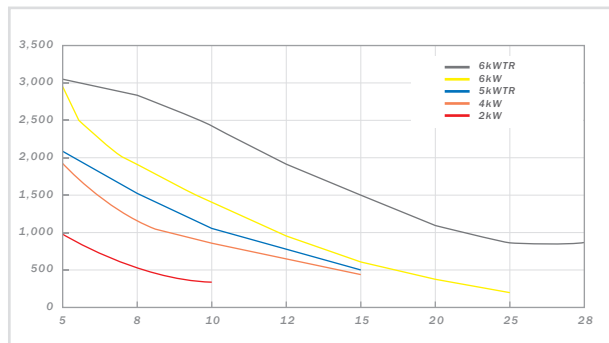
TRUMPF 6kW Stainless steel 28t



Black mild steel CW cutting settings



Black mild steel PW cutting settings



SUS304 cutting settings

Cutting machine specification

Model	LASERTEX-xx20 Z	LASERTEX-xx40 Z	LASERTEX-xx60 Z
Structure	Laser oscillator-mounted torch carriage		Oscillator-mounted machine
NC unit	FANUC-160iLB		
Tape memory length	1280, 2560, 5120m		
Effective cutting width	2.1~9.1m		3.5~9.1m
	Separate meeting needed for effective ranges over 9m		
Rail span	3~10m		3.5~10m
Effective cutting length	Effective length max. 47m		
Rail length	Effective length +3m		
Marking speed	18000mm/min		
Cutting settings	Processing condition setting function		
Cutting capacity	Mild steel 19mm	Mild steel 22mm	Mild steel 25mm
	Stainless steel 8mm	Stainless steel 12mm	Stainless steel 25mm
Oscillator manufacturer	FANUC LTD		

FANUC oscillator specification

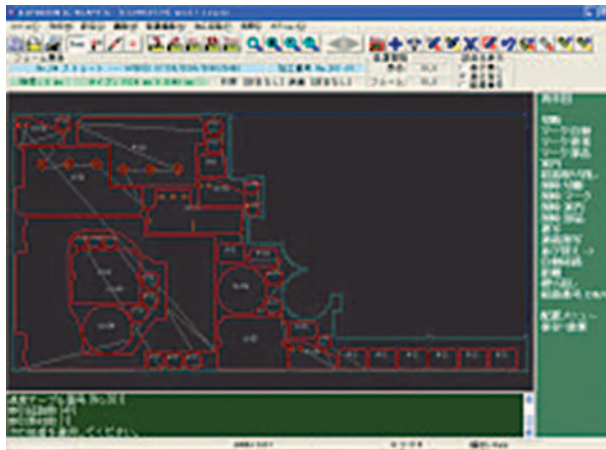
Model	C2000-E	C4000-E	C6000-E
Structure	Integrated resonator and power supply		
Laser rated output	2000W	4000W	6000W
Laser maximum output	2500W		
Output stability	±1%	±2%	±2%
Laser wavelength	10.6μm		
Pulse output command frequency	5~2000Hz		
Laser gas composition CO ₂ :N ₂ :He	5:35:60	5:55:50	
Laser gas consumption	10l/h		20l/h
Coolant flow	75l/min or more	60l/min or more	250l/min or more
Chiller unit coolant capacity	22.1kW or more	44.2kW or more	66kW or more
Input power source	33kVA	55kVA	75kVA
Maximum current	110A	190A	270A
Weight	Approx.700kg	Approx. 900kg	Approx. 1300kg

LASERTEX Z Basic Specification and Options

Basic Specifications

- Axes
*Longitudinal Y axis,
transverse X axis*
- Input device
3.5' FDD/USB
- Power supply voltage
200/220V three-phase
- Gas
*O₂ (SS400 during cutting), air,
N₂ (option), propane (option)*
- Chiller unit
- Assist gas automated control
(pressure control)
*Piercing completion sensor
SS400 No.1 oxygen for cutting*
- Torch control
Capacitance type control
- Nozzle touch detection function
- Coordinate rotation function
(manual laser spot)
- Three-color Patlite
- Photoelectric safety device
(domestic standard)
Front and rear faces of machine
- Fluid shutoff valve
Attached to machine inlet
- Scheduled operation function
Up to 30 plates
- Carriage control panel
- Skipping function
- Reversing
- Processing condition setting
function
- Rail and rail bed
- Cable carrier device
*Cable guide used in both
longitudinal and transverse
directions*
- NC unit
FS160i-LB Memory length 1280m
- Oscillator
*C2000E / C4000E / C6000E
TLF5000 turbo HQ / TLF 6000*
- Standard rail length
15m
- Machine color
Munsell 10YR7/2
- Air dryer
- Piercing completion sensor
- Torch damage prevention function
- One-touch lens holder
For cutting mild steel
- High-speed automated
focus function
- Rail air blower interlocking function
Interlocking with longitudinal drive
- Operation steps
- One-touch machine
stop switch (domestic standard)
Front and rear faces of machine
- Laser gas regulator
- Expanded tape editing function
- Program recommencement function
- Automatic power shutoff function
*Shuts off the NC and compress or
power supplies.*
- BG (background) editing function
- HSQ piercing
- Longitudinal drive
Rack & pinion (two wheel drive) CP15
- Standard tools
- Spare items
- Accessories

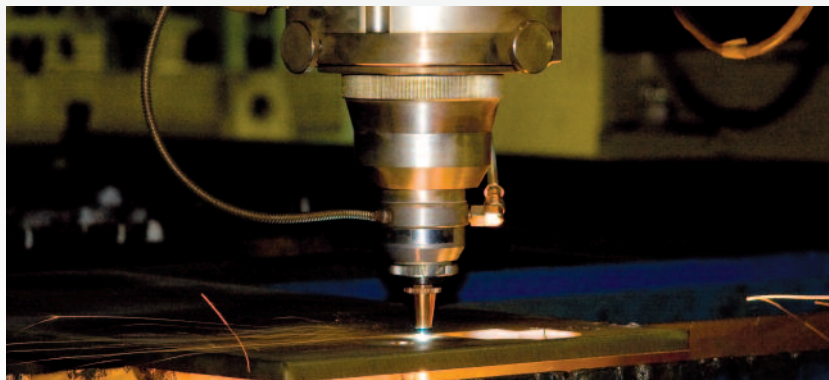
Automated programming system



- KAP8030N
Newest of the KAP series. Allows even a beginning operator easy operation, from the creation of parts data to the creation of NC data.

Option A

- Axis name change
The standard longitudinal direction is the Y axis and the standard transverse direction is the X axis, but this can be changed so that the longitudinal direction is the X axis and the transverse direction is the Y axis.
- Change of original position
The standard program and machine original positions are at the right front of the machine, but this can be changed.
- Paint color change
The paint color of the machine can be changed to a color other than the standard color.
- Change in longitudinal rail length
The standard 15m rail length can be extended to a maximum of 45m.
- Air gun for cleaning
- Scrap cutting torch
Portable gas torch for clearing scraps after cutting. Skill cut 250 (with hose attachment)
- Rail wiper pinion brush
- SUS nitrogen cutting
- Nitrogen laser marking
- Oxygen laser marking
- Instant piercing unit
A piercing unit capable of piercing a steel plate in 1 to 2 seconds. Boasts improved productivity compared to conventional piercing methods.
- Powder marking (1 color, 2 colors)
Adds a powder marking torch. Comes with a powder blowing
- function and automatic ignition device type 3.*
- Marking chamber
Offers a choice of standard or large-scale chambers.
- Marking powder clogging detector
- Powder marking fire detector
- Running time meter
Attach devices that measure cutting or marking time.
- Mirror image function



LASERTEX Z Basic Specification and Options

Option B

- Left-hand use
The control panel can be attached to the left side of the machine for left-hand use (the standard is for right-hand use).
- Automated coordinate rotation function
An air sensor detects the edge of the steel plate and automatically rotates the coordinates of the NC
- Burning detection function
Detects burning during operation, stops laser beam radiation, and temporarily stops the machine.
- Automatic fluid shutoff valve
- SUS oxygen cutting
- Cross spotting
A device can be mounted to illuminate the cross spot used for positioning the torch.
- Collision prevention function
When installing several machines on the same rail, a collision prevention device can be attached to prevent the mutual collision of cutting machines.

NC Options

- Tape memory length
The standard length of 1280m can be extended to 2560m or 5120m.
- Change in number of programs
The standard number of programs is 200, but can be expanded to 400 or 1000.
- Optical fiber
The machine is connected to the KAP8030N (CAD/CAM) via fiber-optic cables and modem to receive NC data.
- Wireless LAN
Wireless LAN devices can be used to create a network connection between the machine and the KAP8030N (CAD/CAM) to read NC data.
- Running time display
Measures and displays power on time, operation time, cutting time, and general integrated time.

Special options

- CCD camera
The image of the area around the torch appears in the monitor installed on the control panel to allow easy entry of coordinate rotation values during operation.
- Change of cable guide position
The standard position of the cable guide along the longitudinal criteria-side rail can be changed to the slave side or mounted on the wall.
- Light
A fluorescent lamp or spot light can be attached to the machine.
- Rail change
The machine accommodates a standard 37k g/m rail, but can be changed to accommodate a "37k M4," "50k CP15," or a "50k CP16" rail of other manufacturers.
- Automatic power supply
A one-week timer can be attached to automatically power on the machine each day at a specified time.
- Cartridge deionizer
- Bevel cutting unit
As with a bevel plasma machine, a bevel head allowing automatic angle settings via NC data control enables V-bevel cutting.
- ITV camera
Machine rear monitor camera
- Cold climate specification
A heater is attached inside the control panel, and the chiller unit is substituted with a cold climate chiller unit.
- Rail span change
The machine can be manufactured with a special span outside the standard rail span normally accommodated by this machine.
- Emergency stop button
An emergency stop button can be added to places besides the control panel.
- Dust collector
A dust collector can be attached to the surface table to process fumes. Various dust collector systems are available, including belt-type and damper switching-type collectors.
- Conversion software
Can be used to convert NC data created by a different machine for use by the LASERTEX.

Laser product options for gas appliances

- Laser protection glasses

Product approved by the US ANSI standard and US Laser Association. Cuts harmful UV rays during cutting as well as shuts out CO₂ laser beams.



- Spatter adhesion prevention agent: Spa-coat N-20HD

Safe, harmless, and odorless spatter adhesion prevention agent for use on steel and stainless steel, paint, and coating.

- Electrolytic grinding unit: Stain-up

Electrolyzes 2B material and hair-line welding burns easily, quickly, cleanly, and safely.

- Laser cutting assist gas supply system

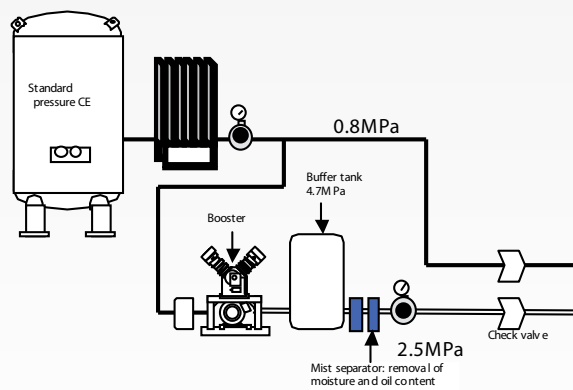
We offer assist gas supply systems for various applications. (The figure below is an example of a high-pressure's supply system.)

- Laser gas automatic switching device

When laser gas inside a cylinder falls below a certain level, the device automatically switches to a full cylinder.

- Various laser gases

We provide a steady supply of high-output laser beam for use as carbon dioxide laser gas. We also have a lineup of laser gases for laser oscillators of various manufacturers (3, 4, 5 type combinations), and will blend laser gases as necessary.





KOIKE – the spirit of cutting.

Advanced technology combined with face to face relationship and an in-depth understanding of customers cutting needs – that's what KOIKE as a Japanese manufacturer of oxy-fuel, plasma and laser cutting technology stands for.

Customers are companies active in shipbuilding, steel construction, vehicle manufacturing, fabrication and other heavy metal industries - they all trust on more than 90 years of KOIKE's cutting expertise.



Your cutting needs – achieved.

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