



**TCI**cutting®  
waterjet & laser systems



**TCIcutting®**  
waterjet & laser systems

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**TCI** *cutting*<sup>®</sup>  
waterjet & laser systems



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**TCI**cutting







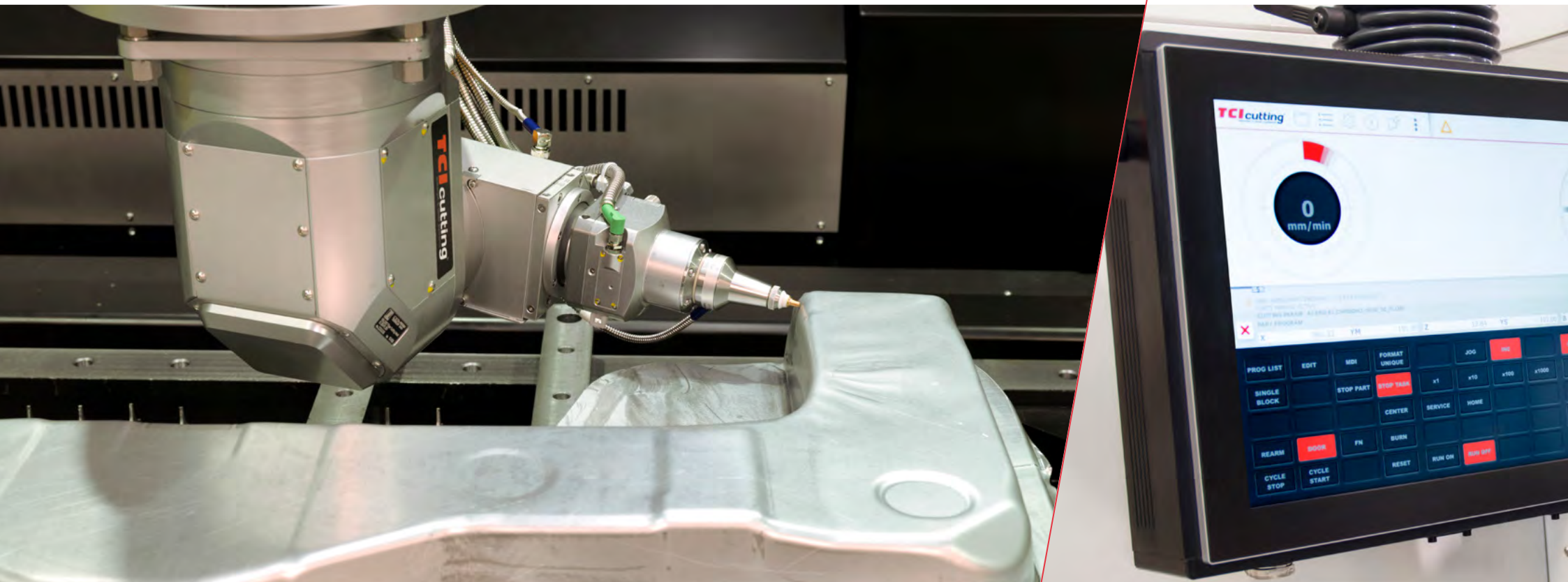
## smartcompany

At **TCI Cutting** we design and manufacture intelligent industrial cutting machines in a fully digitized environment adapted to **Industry 4.0**. From our commitment to offer the highest technology and integral solutions to our customers arises the need to expand the company's facilities to develop an ambitious R & D project.

**TCI Cutting** is by definition a smart factory: we design and manufacture intelligent precision cutting systems through a digitized and interconnected production process under the the best human team supervision. The intelligent factory goes beyond automation and assumes an interconnected and a flexible system, with a constant data flow that allows it to adapt to the new market demand arising within the framework of the Fourth Industrial Revolution.

Thanks to the Internet of Things (IoT) we can achieve process optimization with profitable production despite the reduction of batch sizes or the order complexity. Our company makes **Industry 4.0** available to our clients through the Promanager and Smarttouch software, two powerful manufacturing management systems designed by **TCI Cutting** with the objective of optimizing our cutting machines use in a fully digitized industrial environment. With the **PROmanager** and the **Smarttouch** our clients can configure a **smart factory 4.0**, optimizing production, saving resources and generating a high production level.

# TCI Cutting LASER DIVISION





# LASER division



Our fundamental purpose is innovation and state-of-the-art technological development to satisfy any company needs with an industrial cutting activity in a wide range of materials. Among the products in our catalog Spaceline Fiber stands out as the first 3D fiber laser cutting model, as well as the Smarttube Fiber or the Dynamicline Fiber laser cutting system, the most powerful and fastest cutting system of all those we design and manufacture at **TCI Cutting**.

We offer our clients **technical support, training, spare parts** and **consumables**, with the **highest quality** and an excellent customer-oriented service.



# CO<sub>2</sub> versus Fiber





At **TCI Cutting** we want to offer our clients the laser cutting machine that best suits their specific needs. Fiber cutting systems are the most innovative laser cutting technology but we still manufacture CO2 laser cutting machines due to its specific applications.

The machine access, as the fiber laser's wavelength is ten times smaller than the CO2 laser (1064  $\mu\text{m}$  vs 10.6  $\mu\text{m}$ ), needs greater security since laser reflections are harmful to the eye.

Regarding energy efficiency, the fiber laser is much more efficient as it does not require any resonator gas thus providing lower costs than the CO2 laser. For each energy unit that passes through a CO2 cutting system, approximately 8 to 10% is effectively used, while with the fiber laser it is between 25% and 30%.

The required floor space is another factor to consider. The CO2 laser requires a larger space as the mirrors that direct the beam to the lens have to be at a certain distance. In contrast, the compact design of the fiber laser machine needs a less floor space.

Regarding the lenses that are being used, the CO2 laser requires two lenses that have to be changed depending on the material and the thickness, and their life cycle is approximately 1000 hours. Instead, the fiber laser uses a single lens with a lifetime of approximately 4000 to 5000 hours.





# Features



- CO<sub>2</sub>

A mixture of gases is used to produce the CO<sub>2</sub> laser beam. The high voltage required in the resonator for the gas excitation is generated by wear-free semiconductor modules.

CO<sub>2</sub> laser cutting systems are suitable for cutting materials such as thick plate, wood, acrylic, glass, methacrylate, paper, textiles, plastics, leather and stone.

- Fiber

The fiber laser beam transmission medium requires diodes and fiber cables. Since they do not need a resonator gas, they have lower energy consumption and thus provide greater energy efficiency as well as cost savings.

Fiber laser cutting systems can be smaller CO<sub>2</sub> systems and can achieve twice the power output with the same power supply. They have additional advantages for thin sheet metal and non-ferrous metals such as copper and titanium.

Access to this type of machines is limited for security reasons, since laser reflections are highly damaging to the eyesight. The diameter of the beam is very small and more efficient than the CO<sub>2</sub>

LASER  
division



2D  
CO<sub>2</sub>







## Smartline<sup>®</sup> L-Power

CO<sub>2</sub>, laser series, with sealed resonators, and with powers ranging from 100 W to 600 W.

## Smartline<sup>®</sup> CO<sub>2</sub>

Available in powers ranging from 1,000 W to 3,000 W.

This series offers great cutting quality of both thin or thick materials. It is the perfect cutting system for wood, acrylic, glass, methacrylate, paper, textiles, plastics, leather and stone.

## Powerline<sup>®</sup> series

### Laser precision and reliability

The laser in this series is characterized by a compact and stable design. In addition, high frequency excitation provides a great advantage: the emission of gases is minimized and maintenance costs are reduced.

The Powerline CO<sub>2</sub> series also stands out for its easy start-up. It has a software whose programming and control allow to transform the cutting programs into finished pieces.

With this product series you could expand or add different accessories and automation components as well as expanding manufacturing possibilities, optimizing work and logistics processes.

## Smartline<sup>®</sup> L-Power

## Specifications

- Acceleration: 9,8 m/s<sup>2</sup> (1G)
- Maximum simultaneous positioning speed: 160 m/min
- Precision:  $\pm 0.05$  mm
- High performance with minimal maintenance costs
- Excellent cut quality for fine thickness materials
- The Smartline L- Power series: sealed CO<sub>2</sub> ROFIN resonator  
Resonator power output ranging from 100 W to 600 W
- Compact design with operator protection
- Effective system to change from high to low gas pressure
- Changing lenses with interchangeable cartridges of 3.75 “, 5”, 7.5 “, 10”
- Capacitive Sensor, high pressure cutting head
- TCI Cutting parameter tables
- Pre-cut protective film
- Power output control function for automatic nesting and machining (corners, lead-ins)
- Automatic time and cost calculation for pieces
- Network connection via external PC
- Automatic table exchanger (included for some models)
- Smoke extraction system (included for some models)
- 3 Point reference sensor (sheet rotation detection)
- Collection of workpieces and trimmings
- Dual proportional valve control for different gas pressures with special system for high pressure cutting



#### Models in the Smartline L-Power Series

Smartline 3015 CO<sub>2</sub>

#### Power Output - Resonator

Rofin. Power output  
from 100 W to 600 W

#### Dimensions

3.000x1500x100 mm

#### Characteristics

#### Technical Data

Maximum permitted load	950 kg/m <sup>2</sup>
Number of cutting heads	1
Maximum simultaneous positioning speed	160 m/min
Maximum axial acceleration	9,8 m/s <sup>2</sup> (1G)
Machine Tolerance	± 0.05 mm/m
Repeatability precision	± 0.025 mm/m
Power Output	From 100 W to 600 W
Smoke extraction system	Only optional with power output of 100 W-600 W
Cooling system	Only optional with power output of 100 W-600 W
Automatic table exchanger	Only optional with power output of 100 W-600 W
Manual table exchanger	Only available with power output of 100 W-600 W
Automatic load and unloader	Optional



## Smartline<sup>®</sup> CO<sub>2</sub>

### Specifications

- Acceleration rate: 19,6 m/s<sup>2</sup> (2G)
- Maximum simultaneous positioning speed: 160 m/min
- Precision:  $\pm 0.05$  mm
- High performance with minimal maintenance costs
- Excellent cutting quality for both low and high thickness materials
- The Smartline CO<sub>2</sub> Series: FANUC Resonator. Power output from 1 kW to 3 kW. FANUC Control
- Compact design with operator protection
- Effective system to change from high to low gas pressure
- System for air drying and filtration
- Changing lenses with interchangeable cartridges of 3.75 “, 5”, 7.5 “, 10”
- Capacitive Sensor, high pressure cutting head
- The best cutting results with constant focal compensation using the adaptive mirror
- TCI Cutting parameter tables
- Pre-cut protective film
- Power output control function for automatic nesting and machining (corners, lead-ins)
- Automatic time and cost calculation for pieces
- Network connection via external PC
- Automatic table exchanger (included for some models)
- Smoke extraction system (included for some models)
- 3 Point reference sensor (sheet rotation detection)
- Piercing sensor
- Collection of workpieces and trimmings
- Dual proportional valve control for different gas pressures with special system for high pressure cutting



#### Models in the Smartline CO<sub>2</sub> Series

Smartline 3015 CO<sub>2</sub>

#### Power Output - Resonator

Fanuc. Power output  
from 1.000 W to 3.000 W

#### Dimensions

3.000x1.500x100 mm

#### Characteristics

#### Technical Data

Maximum permitted load	950 kg/m <sup>2</sup>
Number of cutting heads	1
Maximum simultaneous positioning speed	160 m/min
Maximum axial acceleration	19,6 m/s <sup>2</sup> (2G)
Machine Tolerance	± 0.05 mm/m
Repeatability precision	± 0.025 mm/m
Power Output	From 1.000 W to 3.000 W
Smoke extraction system	Included
Cooling system	Included
Automatic Table Exchanger	Optional
Automatic loader and unloader	Optional

## Powerline<sup>®</sup> series

## Specifications

- Acceleration rate: 14,7 m/s<sup>2</sup> (1,5G)
- Maximum simultaneous positioning speed: 160 m/min
- Precision:  $\pm 0.05$  mm
- Highly reliable and rigid bridge
- Low gas and electricity consumption
- Latest generation FANUC Resonator technology
- 30-iLB FANUC control
- Secure machine casing for operator protection
- Effective system to change from high to low gas pressure
- System for air drying and filtration
- Changing lenses with interchangeable cartridges of 3.75 “, 5”, 7.5 “, 10”
- Capacitive Sensor, high pressure cutting head
- The best cutting results with constant focal compensation along the compensation axis (B)
- TCI Cutting parameter tables
- Pre-cut protective film
- 3 different cutting technologies for working with different materials and thicknesses
- Power output control function for automatic nesting and machining (corners, lead-ins)
- Automatic time and cost calculation for pieces
- Network connection via external PC
- Automatic table exchanger
- 3 Point reference sensor (sheet rotation detection)
- Piercing Sensor
- Collection of workpieces and trimmings
- Dual proportional valve system for different gas pressures and special system for high pressure cutting





Models in Powerline CO <sub>2</sub> Series	Power Output - Resonator	Dimensions
Powerline 3015	Fanuc. Power output from 3.000 W to 6.000 W	3.000x1.500x100 mm
Powerline 4020	Fanuc. Power output from 3.000 W to 6.000 W	4.000x2.000x100 mm

Characteristics	Technical Data Powerline 3015	Technical Data Powerline 4020
Maximum permitted load	950 kg/m <sup>2</sup>	950 kg/m <sup>2</sup>
Number of cutting heads	1	1
Maximum simultaneous positioning speed	160 m/min	160 m/min
Maximum axial acceleration	14,7 m/s <sup>2</sup> (1,5G)	9,8 m/s <sup>2</sup> (1G)
Machine Tolerance	± 0.05 mm/m	± 0.05 mm/m
Repeatability precision	± 0.025 mm/m	± 0.025 mm/m
Power Output	From 3.000 W to 6.000 W	From 3.000 W to 6.000 W
Smoke extraction system	Included	Included
Cooling system	Included	Included
Automatic table exchanger	Included	Included
Automatic loader and unloader	Optional	Optional

LASER  
division



2D  
Fiber





## Smartline<sup>®</sup> L-Fiber

The most accessible fiber laser cutting system, with powers from 700 W to 2 kW.

## Smartline<sup>®</sup> Fiber

This series offers the most intelligent and compact fiber laser cutting machines on the market. Within high performance and an innovative design, this cutting system fine sheets to perfection and can also be used for thicker cuts. In addition, its great energy efficiency guarantees a reduced power consumption. Powers available from 1 to 8 kW.

## Speedline<sup>®</sup> Fiber

The Speedline series adds more cutting speed without compromising quality, both in thin and thick sheets. All of this with the best energy efficiency that minimizes electrical consumption. Powers available from 1 to 10 kW.

## Dynamicline<sup>®</sup> Fiber

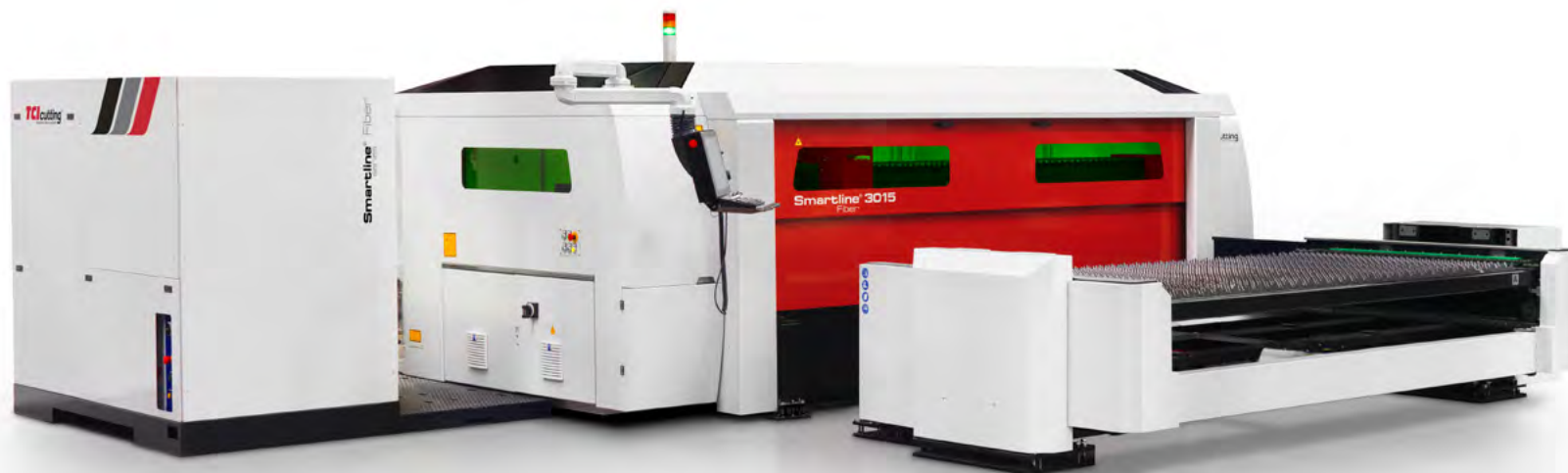
The Dynamicline Fiber is pure power, without losing sight of energy and production efficiency. With versions that reach up to 12 KW cutting power, its design includes linear motors and the possibility of cutting thicknesses up to 30 mm, being able to achieve 3G acceleration and a 3 microns accuracy. Up to 340 m/min travel, the speed guarantees a greater productivity for the most demanding customers.



## Smartline® L-Fiber

### Specifications

- Acceleration rate: 19,6 m/s<sup>2</sup> (2G)
- Maximum simultaneous positioning speed: 160 m/min
- Precision: ± 0.05 mm
- Energy efficiency: greatly reduced power consumption
- Excellent cutting quality for both fine and medium thickness sheets
- IPG Resonator. Power output from 1 kW to 2 kW
- Precitec Light Cutter head (automatic focal)
- Zoom - variable spot (optional)
- Fully enclosed and cabined machine to ensure maximum protection for the operator
- Effective system to change from high to low gas pressure
- Capacitive Sensor, high pressure cutting head
- TCI Cutting parameter tables
- Pre-cut protective film
- Power output control function for automatic nesting and machining (corners, lead-ins)
- Automatic time and cost calculation for pieces
- Network connection via external PC
- Automatic table exchanger (optional)
- Smoke extraction system (included for some models)
- 3 Point reference sensor (sheet rotation detection)
- Piercing Sensor (optional)
- Collection of workpieces and trimmings
- Dual proportional valve control system for different gas pressures and special system for high pressure cutting
- CNC Fanuc 31iLB
- Cooling system
- Automatic nozzle cleaning
- Automatic focus control
- MultiTouch Screen with remote control
- Ultrafast Heightregulation
- TCI Smart Touch 6.0
- TCI Fly Cutting 3.0
- TCI Fast Piercing 2.0
- TCI Automatic cutting system 3.2 (Automation of job lists)



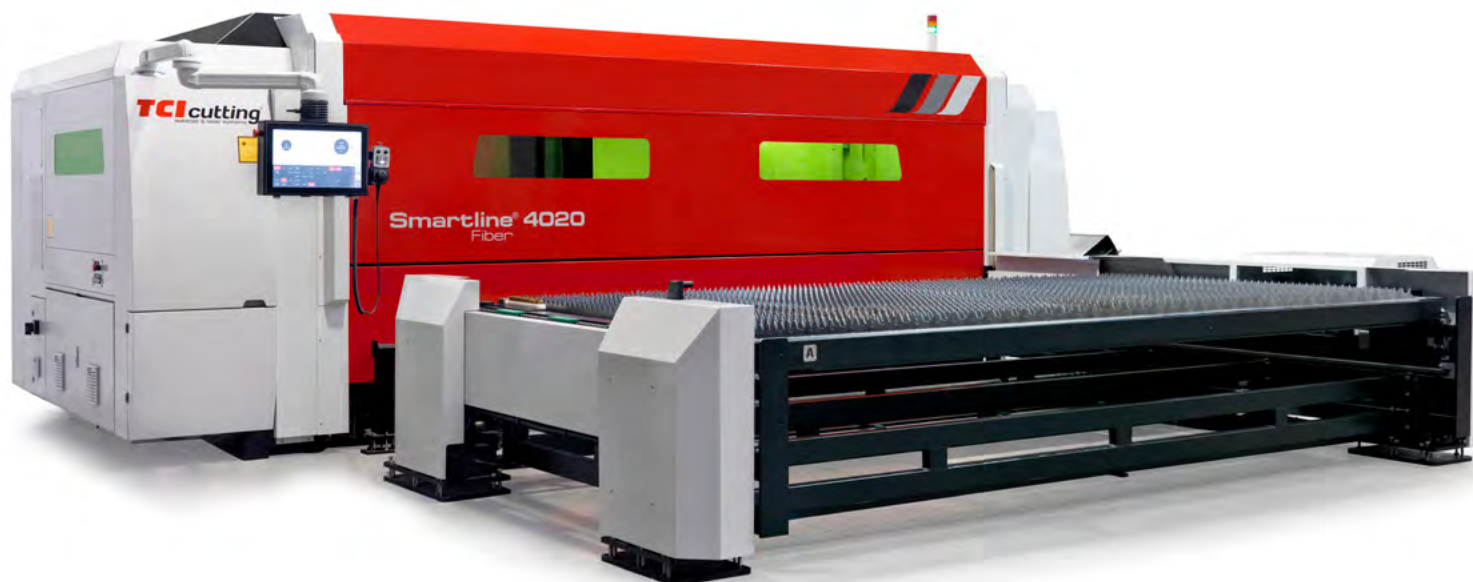
Models in the Smartline L-Fiber Series	Power Output - Resonator	Dimensions	Characteristics	Technical Data
Smartline 3015 L-Fiber	IPG. Power output from 1.000 W to 2.000 W	3.000x1.500x100 mm	Maximum permitted load	950 kg/m <sup>2</sup>
Smartline 3020 L-Fiber		3.000x2.000x100 mm	Number of cutting heads	1
			Maximum simultaneous positioning speed	160 m/min
			Maximum axial acceleration	19,6 m/s <sup>2</sup> (2G)
			Machine Tolerance	± 0.05 mm/m
			Repeatability precision	± 0.025 mm/m
			Power Output	From 1.000 W to 2.000 W
			Fully enclosed and cabined machine	Included
			Smoke extraction system	Included
			Cooling system	Included
			Automatic table exchanger	Optional
			Automatic loader and unloader	Optional

## Smartline<sup>®</sup> Fiber

### Specifications

- Acceleration rate: 19,6 m/s<sup>2</sup> (2G)
- Maximum simultaneous positioning speed: 160 m/min
- Precision: ± 0.05 mm
- Energy efficiency: greatly reduced power consumption
- Excellent cutting quality for both fine and medium thickness sheets
- IPG Resonator. Power output from 1 kW to 8 kW
- Precitec Light Cutter cutting head for power output up to 2 kW
- Precitec / Highyag cutting head for power output greater than 2 kW
- Fully enclosed and cabined machine to ensure maximum protection for the operator
- Effective system to change from high to low gas pressure
- Capacitive Sensor, high pressure cutting head
- TCI Cutting parameter tables
- Pre-cut protective film
- Power output control function for automatic nesting and machining (corners, lead-ins)
- Automatic time and cost calculation for pieces
- Network connection via external PC
- Automatic table exchanger (included for some models)
- Smoke extraction system (included for some models)
- 3 Point reference sensor (sheet rotation detection)
- Piercing Sensor (optional)
- Collection of workpieces and trimmings
- Dual proportional valve control system for different gas pressures and special system for high pressure cutting
- CNC Fanuc 31iLB
- Cooling system
- Automatic nozzle cleaning
- Automatic focus control
- MultiTouch Screen with remote control
- Ultrafast Heightregulation
- TCI Smart Touch 6.0
- TCI Fly Cutting 3.0
- TCI Fast Piercing 2.0
- TCI Automatic cutting system 3.2 (Automation of job lists)





Models in the Smartline Fiber Series	Power Output - Resonator	Dimensions
Smartline 3015 Fiber	IPG. Power output from 1.000 W to 8.000 W	3.000x1.500x100 mm
Smartline 4020 Fiber		4.000x2.000x100 mm

Characteristics	Technical Data
Maximum permitted load	950 kg/m <sup>2</sup>
Number of cutting heads	1
Maximum simultaneous positioning speed	160 m/min
Maximum axial acceleration	19,6 m/s <sup>2</sup> (2G)
Machine Tolerance	± 0.05 mm/m
Repeatability precision	± 0.025 mm/m
Power Output	From 1.000 W to 8.000 W
Fully enclosed and cabined machine	Included
Smoke extraction system	Included
Cooling system	Included
Automatic table exchanger	Included
Automatic loader and unloader	Optional

## Speedline® Fiber

## Specifications

- Acceleration rate: 19,6 m/s<sup>2</sup> (2G)
- Maximum simultaneous positioning speed: 160 m/min
- Precision: ± 0.05 mm
- Energy efficiency: greatly reduced power consumption
- Excellent cutting quality for both fine and medium thickness sheets
- IPG Resonator. Power output from 1kW to 10kW
- Precitec Light Cutter cutting head for power output up to 2kW
- Zoom - variable spot (optional)
- Precitec / Highyag cutting head for power output greater than 2kW
- Fully enclosed and cabined machine to ensure maximum protection for the operator
- Effective system to change from high to low gas pressure
- Capacitive Sensor, high pressure cutting head
- TCI Cutting parameter tables
- Pre-cut protective film
- Power output control function for automatic nesting and machining (corners, lead-ins)
- Automatic time and cost calculation for pieces
- Network connection via external PC
- Automatic table exchanger (included for some models)
- Smoke extraction system (included for some models)
- 3 Point reference sensor (sheet rotation detection)
- Piercing Sensor
- Collection of workpieces and trimmings
- Dual proportional valve control system for different gas pressures and special system for high pressure cutting
- Production control screen (optional, some models included)
- CNC Fanuc 31iLB
- Cooling system
- Automatic nozzle cleaning
- Automatic focus control
- MultiTouch Screen with remote control
- Ultrafast Heightregulation
- TCI Smart Touch 6.0
- TCI Fly Cutting 3.0
- TCI Fast Piercing 2.0
- TCI Automatic cutting system 3.2 (Automation of job lists)



Models in the Speedline Fiber Series	Power Output - Resonator	Dimensions
Speedline 1530 Fiber	IPG. Power output from 1.000 W to 10.000 W	1.500x3.000x100 mm
Speedline 2040 Fiber		2.000x4.000x100 mm
Speedline 2060 Fiber		2.000x6.000x100 mm
Speedline 3060 Fiber		3.000x6.000x100 mm

Characteristics	Technical Data
Maximum permitted load	950 kg/m <sup>2</sup>
Number of cutting heads	1 to 2
Maximum simultaneous positioning speed	160 m/min
Maximum axial acceleration	19,6 m/s <sup>2</sup> (2G)
Machine Tolerance	± 0.05 mm/m
Repeatability precision	± 0.025 mm/m
Power Output	From 1.000 W to 10.000 W
Fully enclosed and cabined machine	Included
Smoke extraction system	Included
Cooling system	Included
Automatic table exchanger	Included
Automatic loader and unloader	Optional

## Dynamicline® Fiber

## Specifications

- Acceleration rate: 29,4 m/s<sup>2</sup> (3G)
- Maximum simultaneous positioning speed: 340 m/min
- Precision: ± 0.05 mm
- Energy efficiency: greatly reduced power consumption
- Excellent cutting quality for both fine and medium thickness sheets
- IPG Resonator. Power output from 1 kW to 12 kW
- Precitec Light Cutter cutting head for power output up to 2 kW
- Zoom - variable spot (optional)
- Precitec / Highyag cutting head for power output greater than 2 kW
- Fully enclosed and cabined machine to ensure maximum protection for the operator
- Effective system to change from high to low gas pressure
- Capacitive Sensor, high pressure cutting head
- TCI Cutting parameter tables
- Pre-cut protective film
- Power output control function for automatic nesting and machining (corners, lead-ins)
- Automatic time and cost calculation for pieces
- Network connection via external PC
- Automatic table exchanger (included for some models)
- Smoke extraction system (included for some models)
- Sheet metal detection system, using artificial vision software.
- 3 Point reference sensor (sheet rotation detection)
- Piercing Sensor (optional)
- Collection of workpieces and trimmings
- Dual proportional valve control system for different gas pressures and special system for high pressure cutting
- CNC Fanuc 31iLB
- Cooling system
- Automatic nozzle cleaning
- Automatic focus control
- MultiTouch Screen with remote control
- Ultrafast Heightregulation
- TCI Smart Touch 6.0
- TCI Fly Cutting 3.0
- TCI Fast Piercing 2.0
- TCI Automatic cutting system 3.2: (Automation of job lists)





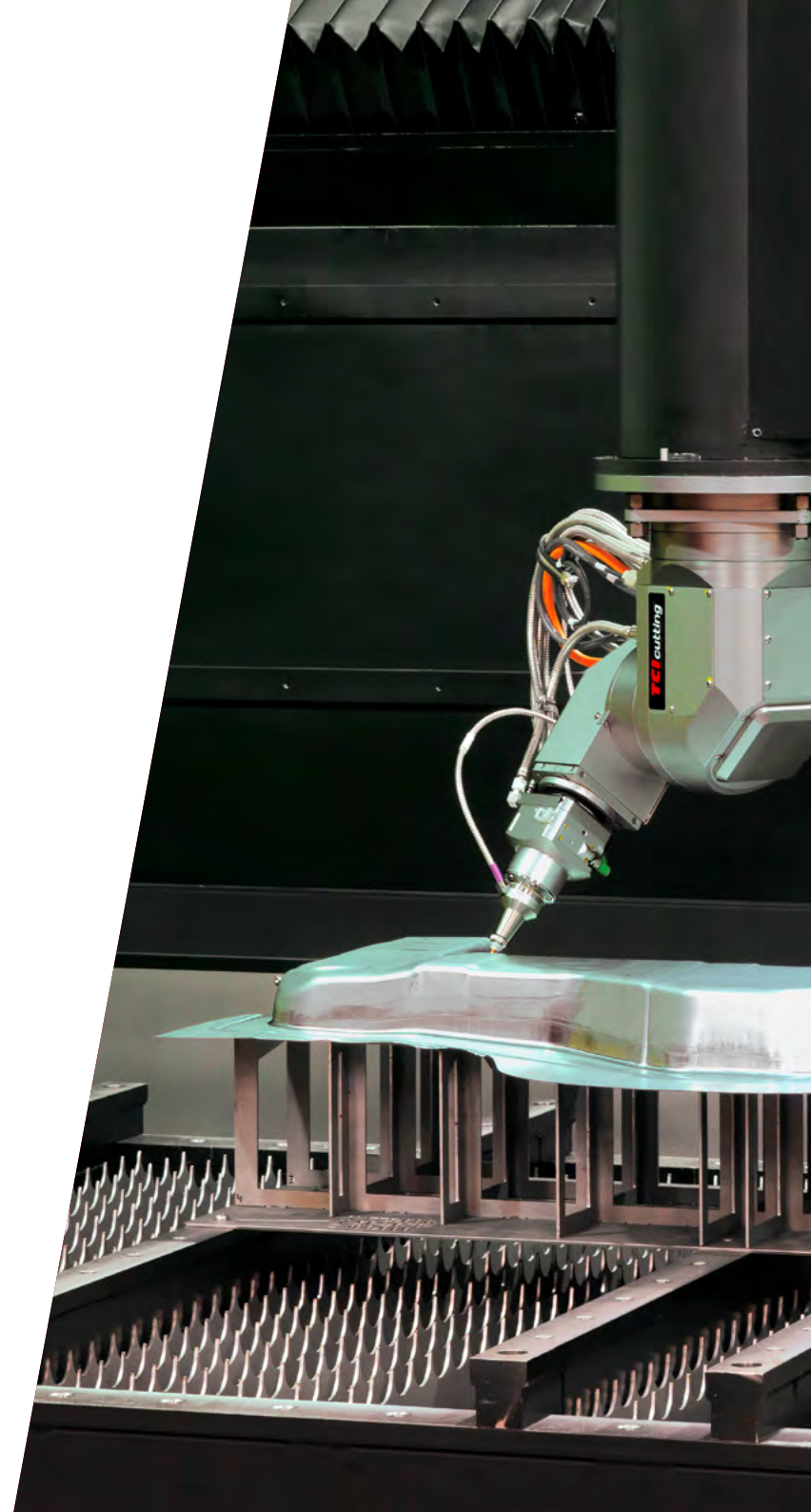
Models in the Dynamic Fiber Series	Potencia - Resonador	Medidas
Dynamicline 1530 Fiber	IPG. Power output from 1.000 W to 12.000 W	1.500x3.000x100 mm

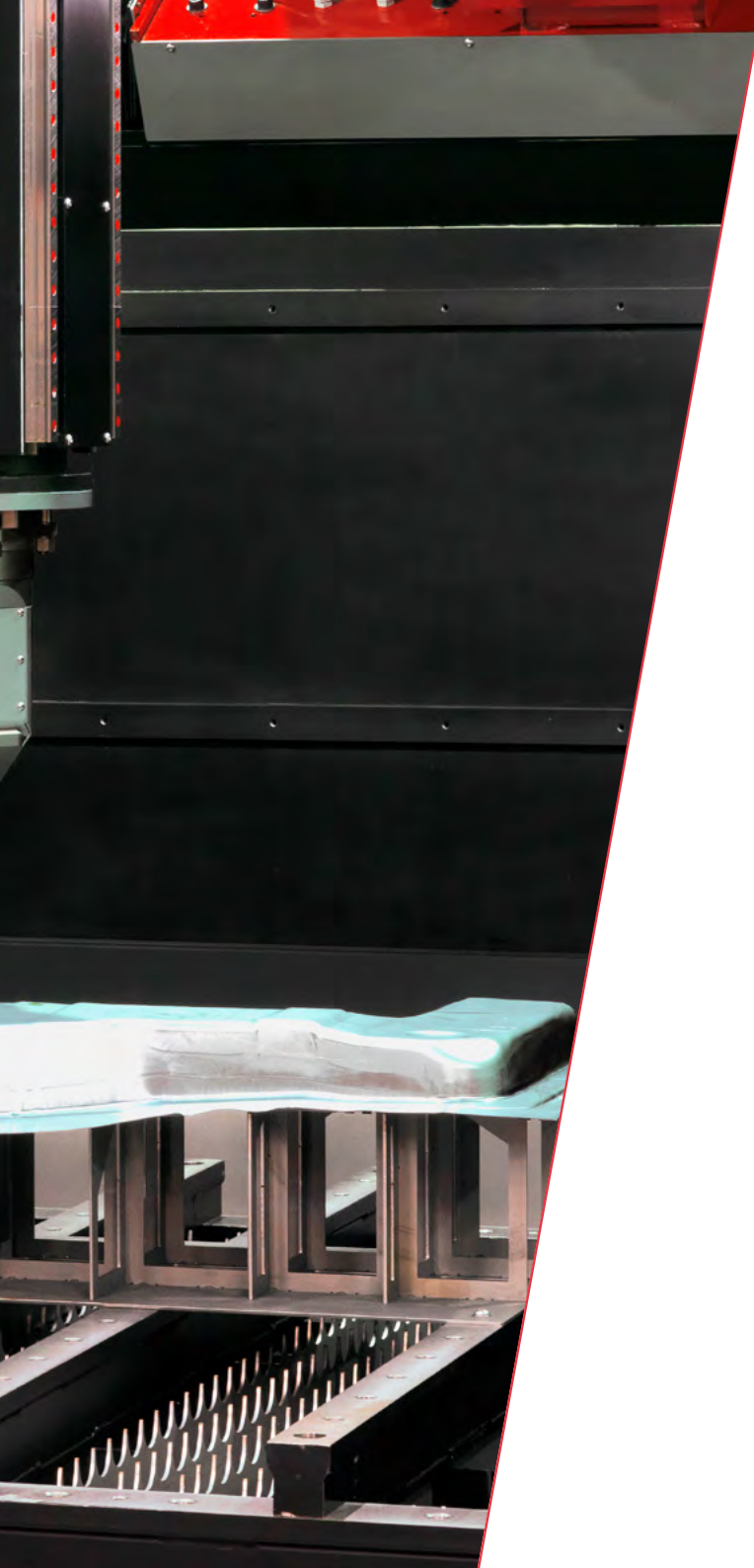
Characteristics	Technical Data
Maximum permitted load	950 kg/m <sup>2</sup>
Number of cutting heads	1
Maximum simultaneous positioning speed	340 m/min
Maximum axial acceleration	29,4 m/s <sup>2</sup> (3G)
Machine Tolerance	± 0.05 mm/m
Repeatability precision	± 0.025 mm/m
Power Output	From 1.000 W to 12.000 W
Fully enclosed and cabined machine	Included
Smoke extraction system	Included
Cooling system	Included
Automatic table exchanger	Included
Automatic loader and unloader	Optional

LASER  
division



3D  
Fiber





## The intelligent 3D laser cutting solution

### **Spaceline<sup>®</sup>** Fiber

The Spaceline Fiber series from TCI Cutting opens a new world of 3D laser cutting possibilities thanks to our 5-axis head. A production with complex cuts will become a simple task thanks to this fully robotic system. The powerful arm that houses the 3D cutting head allows to create cutting programs with multiple angles for the same piece as well as reaching an acceleration of 1G, with powers from 1 to 3kW (up to 6kW special). The 700 mm of Z axis travel offers infinite cutting possibilities, with both robot and a work table.

This system is one of the most complete and intelligent in the market. Its connectivity with the digital systems generates an unparalleled production flow at the minimum cost. Its versatility and countless configurations make the Spaceline a machine capable to adapt to the needs of any sector.

## Dreamline<sup>®</sup>

Fiber

## Specifications

- Acceleration rate: 9,8 m/s<sup>2</sup> (1G)
- Maximum simultaneous positioning speed: 115m/min
- Precision: ± 0.05 mm
- Energy efficiency: greatly reduced power consumption
- Excellent cutting quality for both fine and medium thickness sheets
- IPG Resonator. Power output from 0,7 kW to 4 kW
- 3-axis head. Infinite rotation and inclination of ± 135°
- Fully enclosed and cabined machine to ensure maximum protection for the operator
- Effective system to change from high to low gas pressure
- Capacitive Sensor, high pressure cutting head
- TCI Cutting parameter tables
- Pre-cut protective film
- Power output control function for automatic nesting and machining (corners, lead-ins)
- Automatic time and cost calculation for pieces
- Network connection via external PC
- Smoke extraction system (optional, basic or zonal)
- 3 Point reference sensor (sheet rotation detection)
- Collection of workpieces and trimmings
- System of one proportional valve for different gas pressures and special system for high pressure cutting
- CNC Fanuc 30iLB
- Cooling system
- Automatic focus control
- MultiTouch Screen with remote control
- Ultrafast Heightregulation
- TCI Smart Touch 6.0
- TCI Automatic cutting system 3.2 (Automation of job lists)





Models in the Dreamline Fiber Series	Power Output - Resonator	Dimensions	Characteristics	Technical Data
Dreamline 3020 Fiber	IPG Power output from 700 W to 4.000 W	3.000x2.400x900 mm	Maximum permitted load	600 kg/m <sup>2</sup>
			Number of cutting heads	1 (5 axes)
			Maximum simultaneous positioning speed	115 m/min
			Maximum axial acceleration	9,8 m/s <sup>2</sup> (1G)
			Machine Tolerance	± 0.05 mm/m
			Repeatability precision	± 0.03 mm/m
			Power Output	De 700 W a 4.000 W
			Axes travel (X, Y, Z)	3.000 x 2.400 x 900 mm
			Dedicated GAP axis (W)	Included
			Measurement system	Absolute optical rulers (optional)

## Spaceline<sup>®</sup>

Fiber

## Specifications

- Acceleration rate: 9,8 m/s<sup>2</sup> (1G)
- Maximum simultaneous positioning speed: 160m/min
- Precision:  $\pm 0.05$  mm
- Energy efficiency: greatly reduced power consumption
- Excellent cutting quality for both fine and medium thickness sheets
- IPG Resonator. Power output from 1 kW to 3 kW
- 3-axis head. Infinite rotation and inclination of  $\pm 135^\circ$
- Fully enclosed and cabined machine to ensure maximum protection for the operator
- Effective system to change from high to low gas pressure
- Capacitive Sensor, high pressure cutting head
- TCI Cutting parameter tables
- Pre-cut protective film
- Power output control function for automatic nesting and machining (corners, lead-ins)
- Automatic time and cost calculation for pieces
- Network connection via external PC
- Motorized tables (optional)
- Smoke extraction system (included for some models)
- 3 Point reference sensor (sheet rotation detection)
- Piercing Sensor (optional)
- Collection of workpieces and trimmings
- System of two proportional valves for different gas pressures and special system for high pressure cutting
- CNC Fanuc 30iLB
- Cooling system
- Automatic nozzle cleaning
- Automatic focus control
- MultiTouch Screen with remote control
- Ultrafast Heightregulation
- TCI Smart Touch 6.0
- TCI Automatic cutting system 3.2 (Automation of job lists)



#### Models in the Spaceline Fiber Series

Spaceline 1540 Fiber

#### Power Output - Resonator

IPG Power output  
from 1.000 W to 3.000 W

#### Dimensions

1.550x4.050x700 mm

#### Characteristics

#### Technical Data

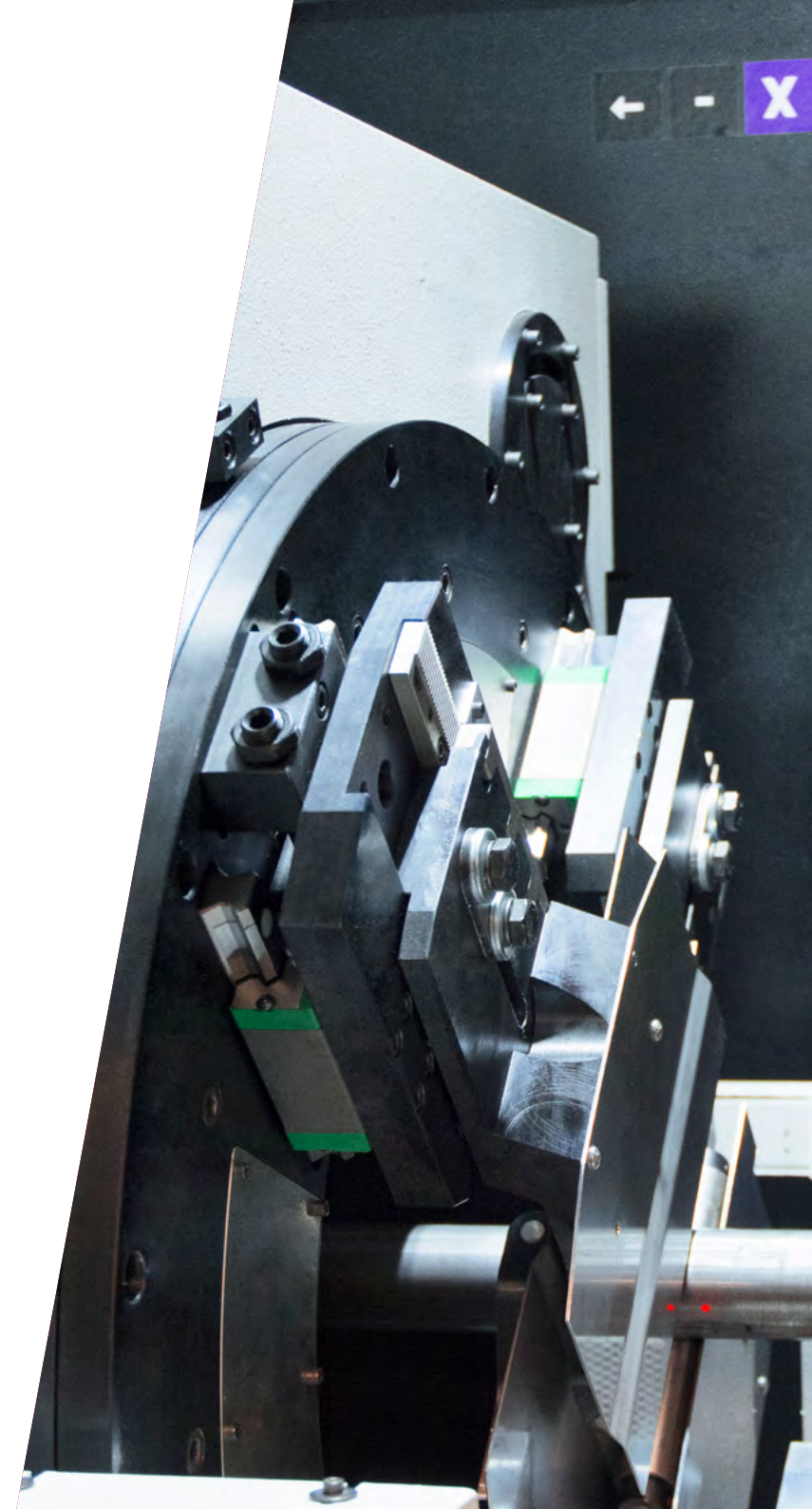
Maximum permitted load	600 kg/m <sup>2</sup>
Number of cutting heads	1 (5 axes)
Maximum simultaneous positioning speed	160 m/min
Maximum axial acceleration	9,8 m/s <sup>2</sup> (1G)
Machine Tolerance	± 0.05 mm/m
Repeatability precision	± 0.03 mm/m
Power Output	De 1.000 W a 3.000 W
Axes travel (X, Y, Z)	1.550 x 4.050 x 700 mm
Dedicated GAP axis (W)	Included
Motorization of loading tables	Included
Motorization of parts with robot	Optional
Measurement system	Absolute optical rulers

LASER  
division



# Tube

Fiber







## High performance tube cutting

### **Smarttube<sup>®</sup>** Fiber

The fiber laser technology meets the tube cutting production, an element broadly used in a wide range of sectors. The new TCI Cutting system is capable of processing tubes from  $\varnothing 20$  mm to  $\varnothing 220$  mm, as well as square profiles. In addition, this new tube laser cutting system with fiber source allows to cut both closed profiles or open profiles with the five axes head.

With innumerable capacities and possibilities, this machine covers a wide range of profiles, with manual and/or semi-automatic loading, up to 6 meters (40 kg /m) and can perform a multiple unloading controlled from the Central Numerical Control, CNC.

The technical characteristics of TCI Cutting's Smarttube make it the most versatile and flexible machine on the market, since it offers a complete solution, with very low energy consumption and an unmatched cutting quality.

## Smarttube<sup>®</sup> Fiber

## Specifications

- Acceleration rate: 9,8 m/s<sup>2</sup> (1G)
- Maximum simultaneous positioning speed: 50 m/min
- Precision: ± 0.05 mm
- Energy efficiency: greatly reduced power consumption
- Excellent cutting quality for both fine and medium thickness sheets
- IPG Resonator. Power output from 1 kW to 3 kW
- Precitec / Highyag cutting head
- Fully enclosed and cabined machine to ensure maximum protection for the operator
- Effective system to change from high to low gas pressure
- Capacitive Sensor, high pressure cutting head
- TCI Cutting parameter tables
- Pre-cut protective film
- Power output control function for automatic nesting and machining (corners, lead-ins)
- Automatic time and cost calculation for pieces
- Network connection via external PC
- Smoke extraction system (included for some models)
- Tube length measuring sensor
- Piercing Sensor (optional)
- Collection of workpieces and trimmings
- Dual proportional valve control system for different gas pressures and special system for high pressure cutting
- ESA CNC
- Cooling system
- Automatic focus control (included for some models)
- MultiTouch Screen
- Ultrafast Height regulation
- TCI Smart Touch 6.0
- Maximum Warehouse Load. 100 Kg/m (600x600)
- Maximum load length: 6000 mm
- Minimum load length: 3000 mm
- Maximum discharge length: 3000 mm



Models in Smarttube Fiber series	Power Output - Resonator	Dimensions
Smarttube 6000 Fiber	IPG. Power output from 1.000 W to 3.000 W	6.000 mm x ø220 mm

Characteristics	Technical Data
Maximum permitted load	40 kg/m <sup>2</sup>
Number of cutting heads	1 (2D o 3D)
Maximum simultaneous positioning speed	50 m/min
Maximum axial acceleration	9,8 m/s <sup>2</sup> (1G)
Machine Tolerance	± 0.05 mm/m
Repeatability precision	± 0.03 mm/m
Power Output	1.000 W to 3.000 W
Supported formats	Circular, squared and rectangular
Tube dimensions	ø20 mm to ø220 mm
Maximum warehouse load	100 Kg/m (ø600 mm)
Collection of workpieces and trimmings	Included
Finished pieces extraction	Included



# Automation

## Loading and unloading

At TCI Cutting we have a complete range of automated sheet loaders, with which the loading/unloading of material on the cutting tables becomes a simple process within the workflow.

In addition, our engineers team can provide any customized storage center, thus providing a complete solution for your cutting center and obtaining the best performance for your installation.



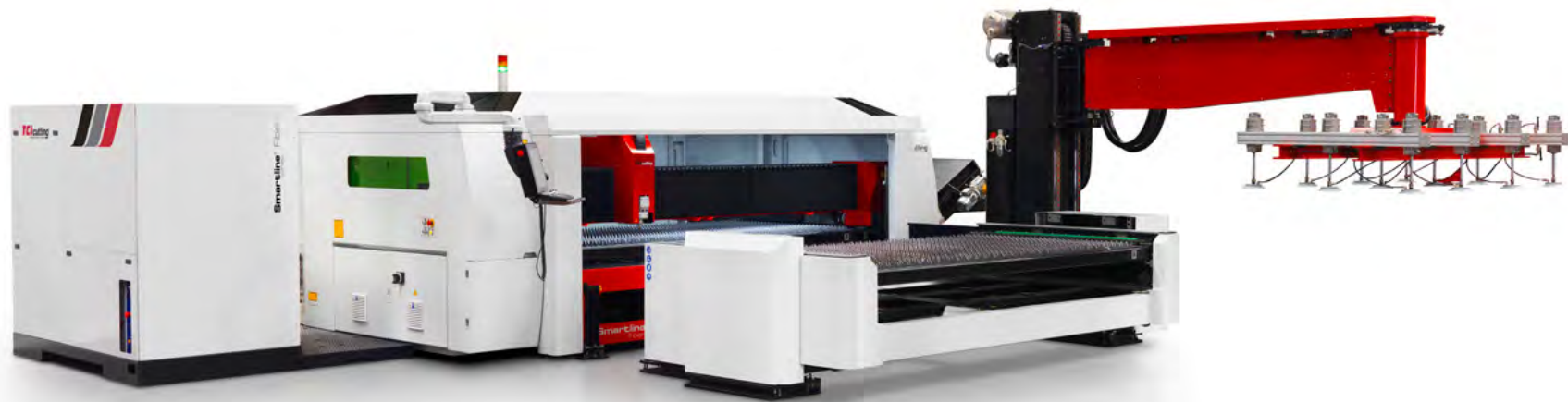




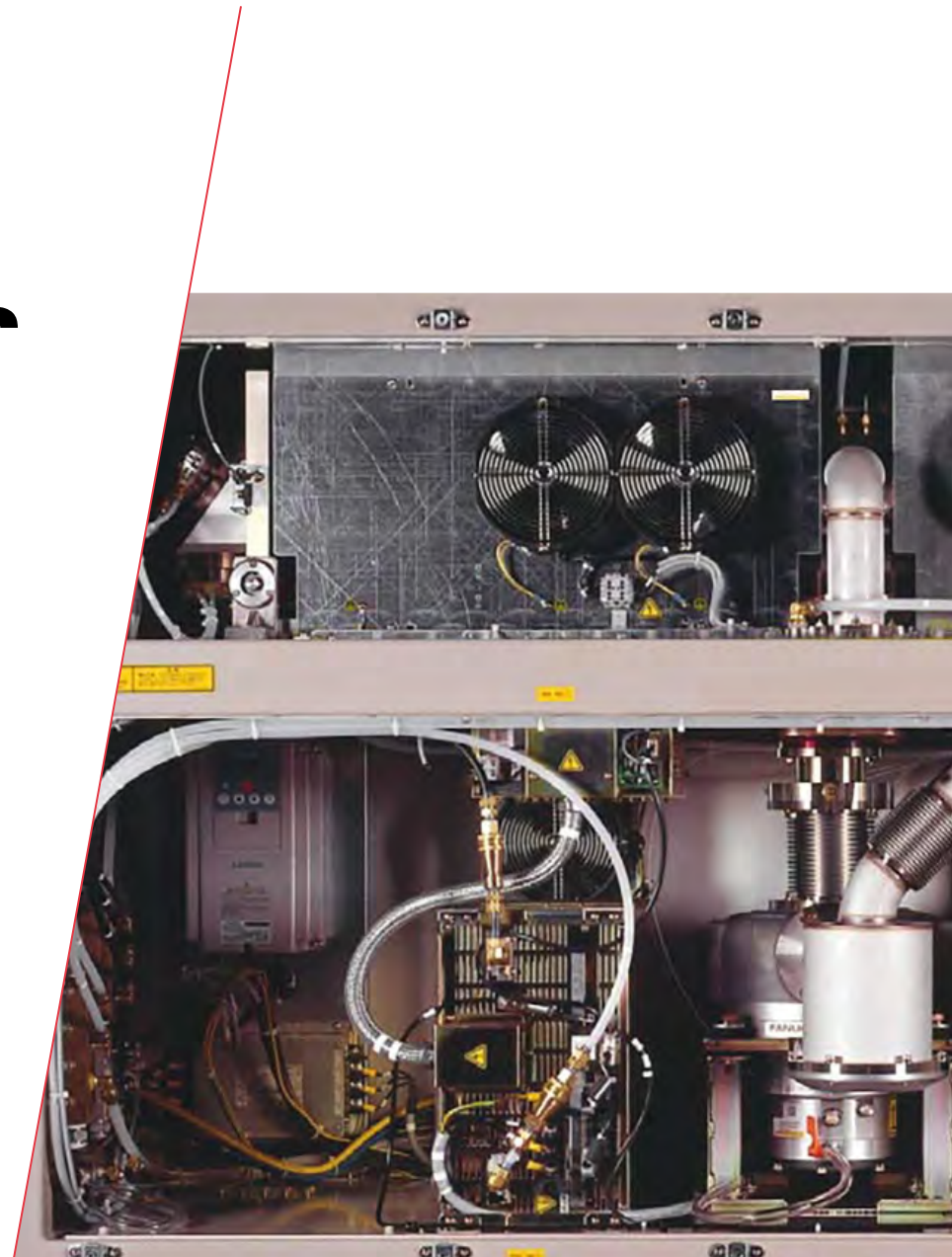
TCI loader 4.0



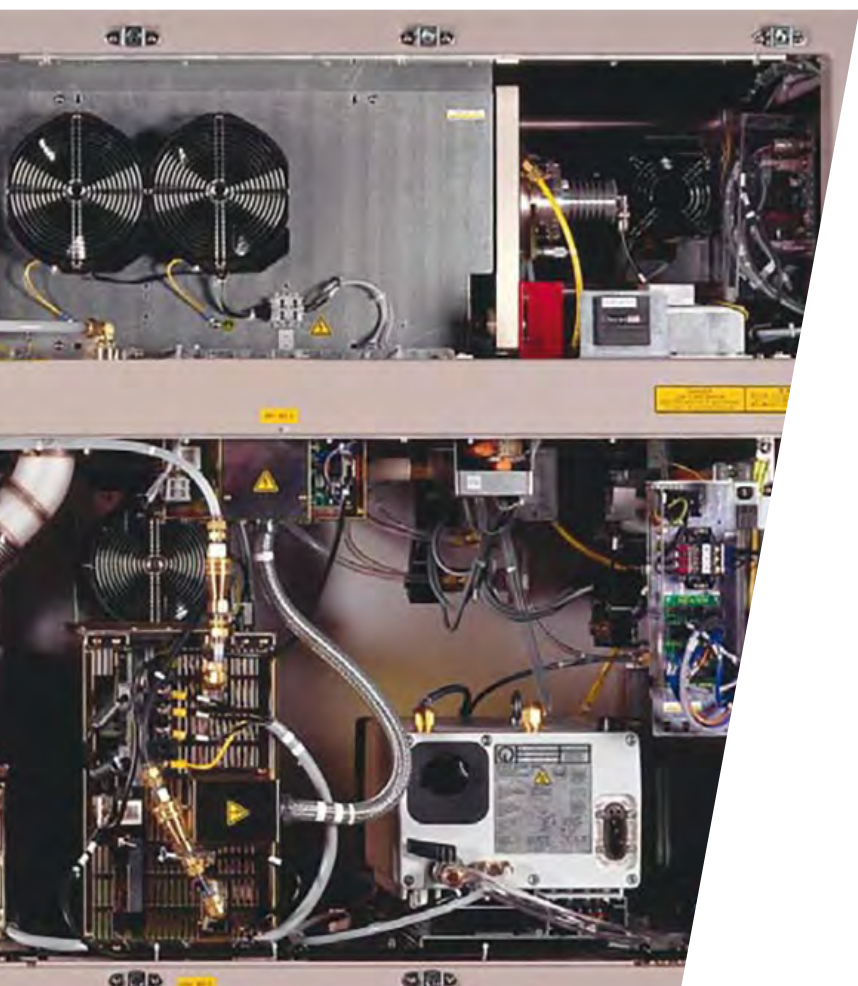




# Laser sources







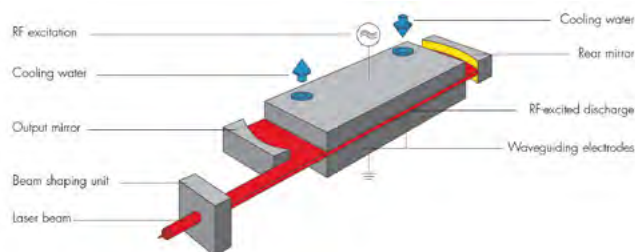
# ROFIN Sealed CO<sub>2</sub> Laser resonator

**More than 38,000 systems installed around the world endorse their experience.**

ROFIN manufactures a wide range of CO<sub>2</sub> lasers ranging from fully sealed equipment to multi-kW lasers, with a power range from 30 to 8000 W. Its high reliability, low maintenance cost and excellent beam quality have become essential tools for the current production of both cutting, welding and structured, drilled, drilled or marked.

The revolutionary principle of the sealed laser of the SC series rounds off the power of the CO<sub>2</sub> laser range available in ROFIN, with powers from 100 to 600 W. The SC laser is completely sealed and does not need gas recirculation equipment, such as vacuum pumps or pressure control systems. The interior gas needs to be changed every 16.000 hours of operation, so the expenses are minimal. The complete SC laser range have a unique design and the resonator produces linear polarization laser light.

Power and precision are the characteristics that define the SC series. Lightweight and robust, these lasers are easily integrated with mechanical handling equipment.



# Laser sources



ROFIN	SCX10	SCX20	SCX40	SCX60
Power output (W)	100	200	400	600
Recommended cooling power (kW)	≥2	≥5	≥7	≥14
Electrical supply (kW)	2,1	4,5	7,5	15
Maximum sheet thickness*:				
Steel (mm)	1	3	4	6
Stainless steel (mm)	0,5	2	3	4

\* To cut the maximum thickness, the following conditions must be met:

- Optimal adjustment and maintenance of the laser cutting equipment.
- Metals must be of the quality specified by TCI Cutting.

# FANUC CO<sub>2</sub> Laser resonator

## The endorsement of the largest numerical controls CNC and servomotors manufacturer

FANUC has devised the solution called “laser package”. The laser source, the CNC numerical control and the servomotors are perfectly adjusted as a fully integrated system. All the algorithms necessary for laser control and diagnosis are part of the CNC numerical control so that the laser source does not require a separate control. There are multiple advantages of an integrated package solution: efficient and reliable start-up of a new laser machine; simplified management, monitoring and maintenance; as well as an integration of a wide range of special functions.

FANUC CO<sub>2</sub> laser sources use the most advanced technology. The fully transduced RF Discharge units stand out, which combined with intelligent solutions increase the reliability and the product life time even more.

The carbon dioxide laser in continuous mode has great power and is easily accessible. It is also very effective since the pumping power ratio (excitation power) vs output power reaches 20%. This type of laser emits in IR and its main wavelength band is between 9.4 and 10.6 μm (microns).

Carbon dioxide CO<sub>2</sub> laser cutting is the most important example of molecular lasers. The active medium in this laser is carbon dioxide, and laser transitions are carried out at the CO<sub>2</sub> energy levels. Nitrogen gases N<sub>2</sub> and helium He are important for the CO<sub>2</sub> molecule excitation-relaxation processes.



# Laser sources



FANUC	C1000i-C	C2000i-C	C3000i-C	C4000i-C	C6000i-C
Power output (W)	1.000	2.000	3.000	4.000	6.000
Recommended cooling power (kW)	11	22	33	44	66
Electrical supply (kW)	18	33	44	55	75
Maximum sheet thickness*:					
Steel (mm)	10	15	22	28	32
Stainless steel (mm)	6	10	12	15	20
Aluminium (mm)	3	6	8	10	15

\* To cut the maximum thickness, the following conditions must be met:

- Optimal adjustment and maintenance of the laser cutting equipment.
- Metals must be of the quality specified by TCI Cutting.

# IPG Fiber Laser Resonator

IPG-PHOTONICS is the world's leading high-power fiber lasers and fiber amplifiers provider. Founded by one of the fiber laser pioneers, the physicist Valentín P. Gapontsev, this company has revolutionized the fiber laser performance and utility in a remarkable variety of materials processing, micromachining, telecommunications, medical applications and other advanced systems.

The fiber laser is composed of high power multimode diodes from a single emitter or diode busbars, usually through a coating that surrounds a single-mode core.

This single-mode core is within a range of 5 to 12 microns diameter. The double-coated fiber consists of a single-mode inner core doped with the appropriate ions, such as neodymium, erbium, ytterbium and thulium. The coating is made of undoped glass due to its lower refractive index. The pump light is injected into the coating and then is propagated along the structure, passing through the active core and producing a population reversal. The emission wavelength is a function of the doped fiber options and by any type of reflector (a typical example would be Bragg gratings)

# Laser sources



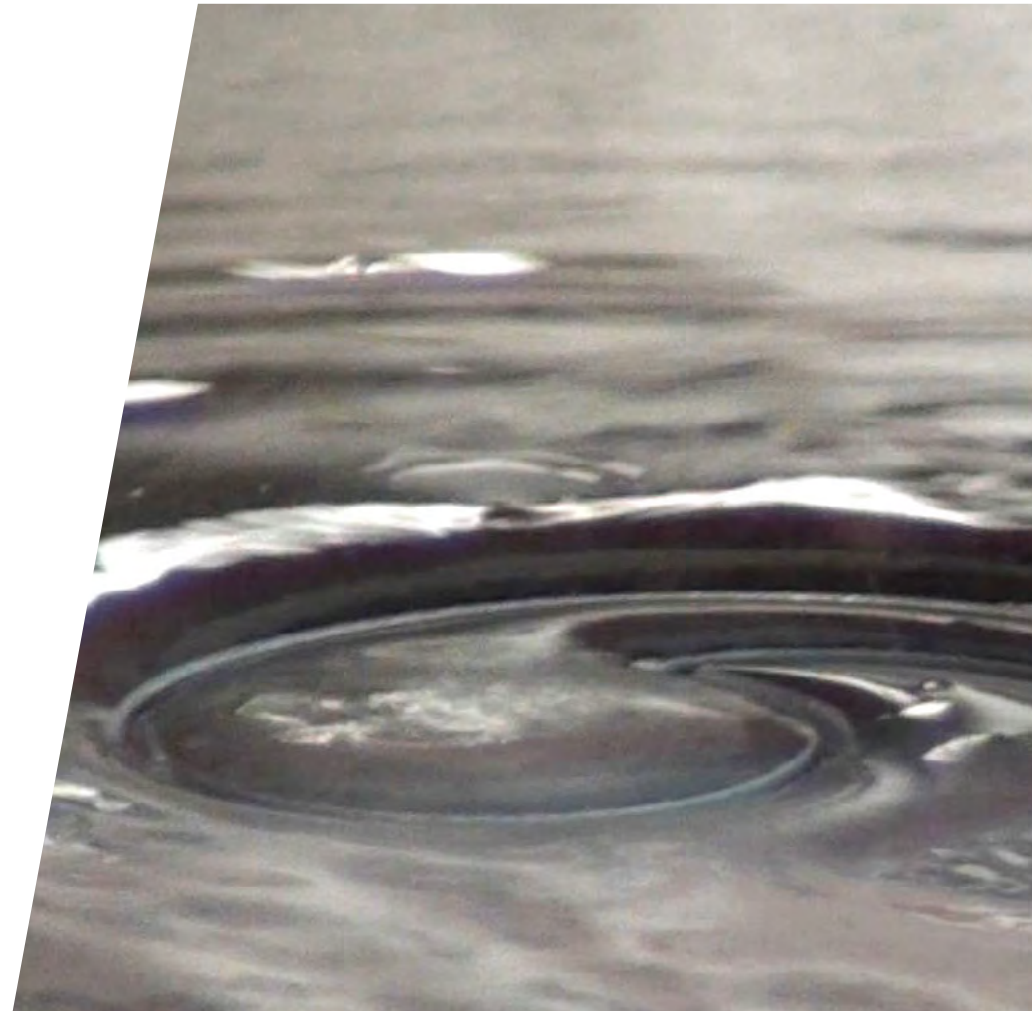
IPG	YLS-1000	YLS-2000	YLS-3000	YLS-4000	YLS-6000	YLS-8000	YLS-10000	YLS-12000
Power output (W)	1.000	2.000	3.000	4.000	6.000	8.000	10.000	12.000
Recommended cooling power (kW)	2,1	4,2	6,4	8,5	12,6	16,7	20,8	24,9
Electrical supply (kW)	3,1	6,1	9,1	12,1	18,2	24,3	30,4	36,5
Maximum sheet thickness*:								
Steel (mm)	10	15	20	20	25	25	25	25
Stainless steel (mm)	4	8	12	15	20	30	30	35
Aluminium (mm)	2	6	10	12	15	30	30	35
Brass (mm)	2	4	6	8	10	15	15	20
Copper (mm)	2	4	5	6	8	12	12	20

\* To cut the maximum thickness, the following conditions must be met:

- Optimal adjustment and maintenance of the laser cutting equipment.
- Metals must be of the quality specified by TCI Cutting.

# **WATERJET**

division



# Agua versus plasma HD

two effective ways of cutting



The extensive design and manufacture TCI Cutting experience of industrial precision waterjet cutting machines places us as leaders in this market.

Our HD Plasma cutting needs expertise has driven us to develop our own engineering and technology to offer flexibility and quality to our customers.

The combination of HD plasma with Waterjet technology conjugate speed and cut quality, two essential requirements to be competitive in an increasingly wide and changing market.





## Technology

The TCI Cutting machines are versatile and flexible. They are developed for waterjet cutting, with abrasive cutting for hard materials (steel, glass, ceramics, stoneware, aluminum, titanium or stainless steel) and with pure water cutting for soft materials (foam, rubber, etc.).

Our waterjet cutting systems are divided into two series:

- **BP Series** (bridge)
- **SM Series** (arm)

As an added value, we provide customized solutions for all types of clients. Our engineering department develops customized machines after a thorough study of our customers required needs.

### All TCI Cutting machines includes:

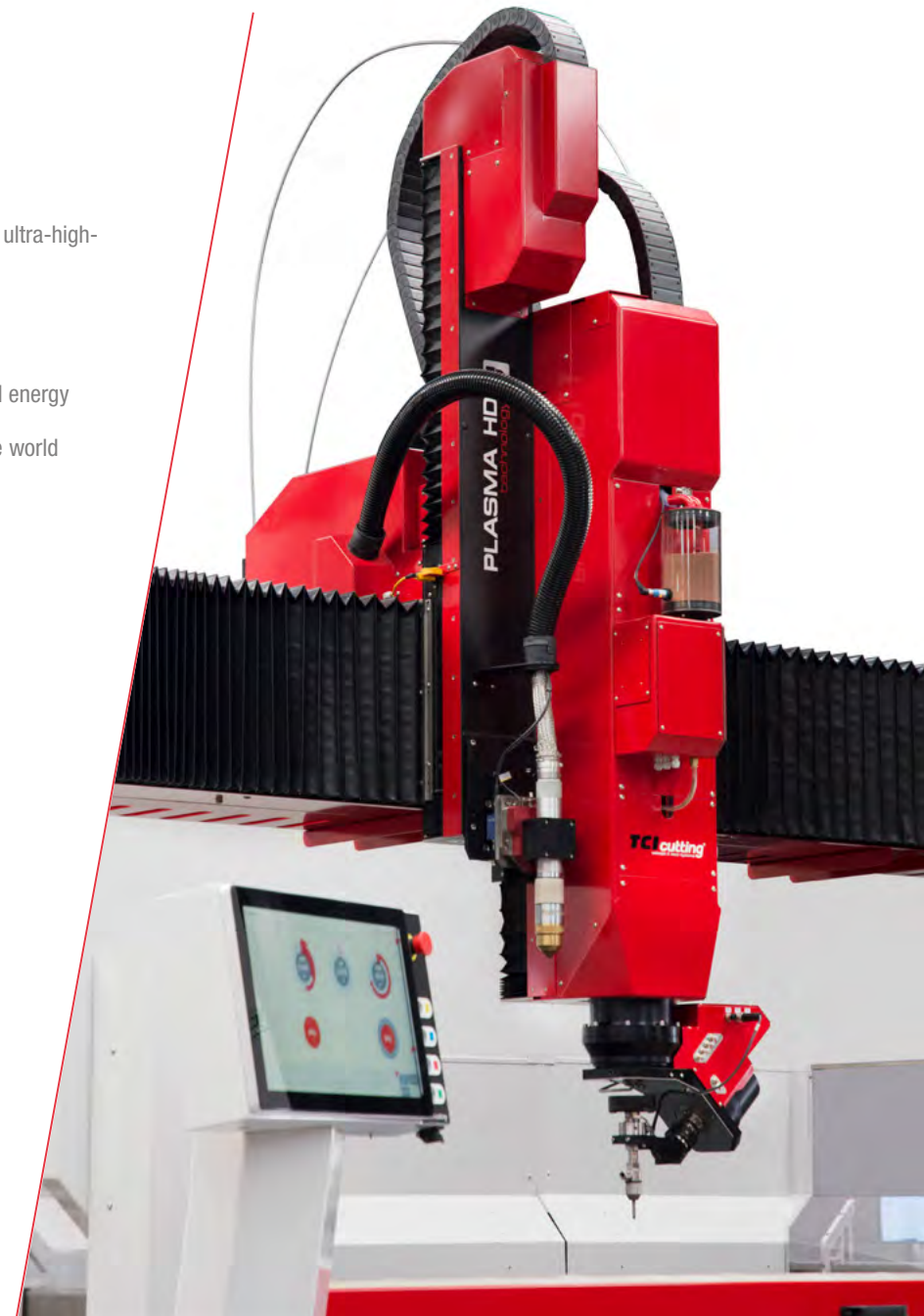
- Protection against vibrations.
- Optimal protection of the operator in the cutting area.
- Simple programming.
- Modern drive system that reduces maintenance costs.
- **TCI Cutting** Hot-line technical assistance service.

The waterjet systems developed by TCI Cutting, combine our experience and technology with the characteristics of ultra-high-pressure water, achieving a unique cutting capability for a wide variety of materials and thicknesses.

Our waterjet projects water at a speed three times higher than the speed of sound, thanks to the conversion of potential energy at pressure higher than 6,200 bars into kinetic energy. In addition, we use 3D cutting heads, the only patented system in the world that allows infinite rotation and maintains the focal point.

### Technological Advantages:

- They allow to cut the whole range of materials and thicknesses, even painted surfaces
- Low cutting temperature that avoids thermal alterations and residual stresses.
- Clean cutting without harmful atmospheres and no need for finishing work.
- The cut surface does not crack or bend.
- Optimal use of raw material with negligible material waste.
- Very strict tolerances.
- Possibility of performing different cut types simultaneously.
- Very profitable, both in short and long and repetitive series.
- Reduced operating costs.





## Comprehensive service worldwide

Selling equipment may be easy, but the real value of a company is in its after sales service.

**TCI Cutting** has a strong customer support structure, which operates worldwide, by telephone, on-line or in person.

Our goal is to grow together with customers. Because the sale is only a single moment, but the real work starts afterwards, during the daily operation, providing answers and solutions, with consumables and accessories, giving appropriate training to optimize results and return on investment.

## Minimal maintenance

Good products require minimal maintenance. **This is a clear indication of quality engineering. From our aeronautical customers we have learned to manufacture equipment with the best components and assemble them with "zero error" procedures.** This is how we offer machines that maximize operating time, and never stop.

# Specifications

- Simultaneous displacement speeds up to 85 m/min.
- Intelligent treatment system for movement up to 4 independent heads that allows maximum use of materials.
- Software to track the machine consumables status in real time to perform preventive maintenance and avoid stops.
- Fully automated machine sludge cleaning system.
- CNC, control cabinet, intensifier and peripherals protected from the machine working area.
- Possibility of loading materials both front and both sides.
- Autonomous operating system.
- Anti-collision system with digital sensitivity regulation.
- On-line technical support by mechanical engineers, on automatic, electronic and industrial design.
- Installation and start-up in 7 days.

## Fields of application



**Aeronautics:** alloys, insulators, carbon fiber, titanium.

**Food:** meat, chocolate, cakes, fish.

**Automotive:** alloys, rubber, composites, leather.

**Construction:** rods and bars, ceramics, marble, beams.

**Toys:** foams, synthetic fibers, polymers, polypropylene.

**Metallurgy:** steel, stainless steel, alloys, brass.

**Furniture:** glass, mirrors, wood, fabrics.

**Advertising:** Plexiglas, polyethylene, PVC, vinyl.



# BP<sup>®</sup> series







# BP Series

## Robust and powerful

The **TCI Cutting** BP machine series are characterized by a bridge-type construction, which gives them great robustness and enables them to cut large surfaces.

The gantry drive system on the Y axis allows high acceleration and high speed thus reducing operating time.

**TCI Cutting** offers 4 models of BP machines:

- **BP-C** Series (Compact)
- **BP-S** Series (Standard)
- **BP-M** Series (Modular)
- **BP-H** Series (High)

# BP-C<sup>®</sup> (Compact) Series

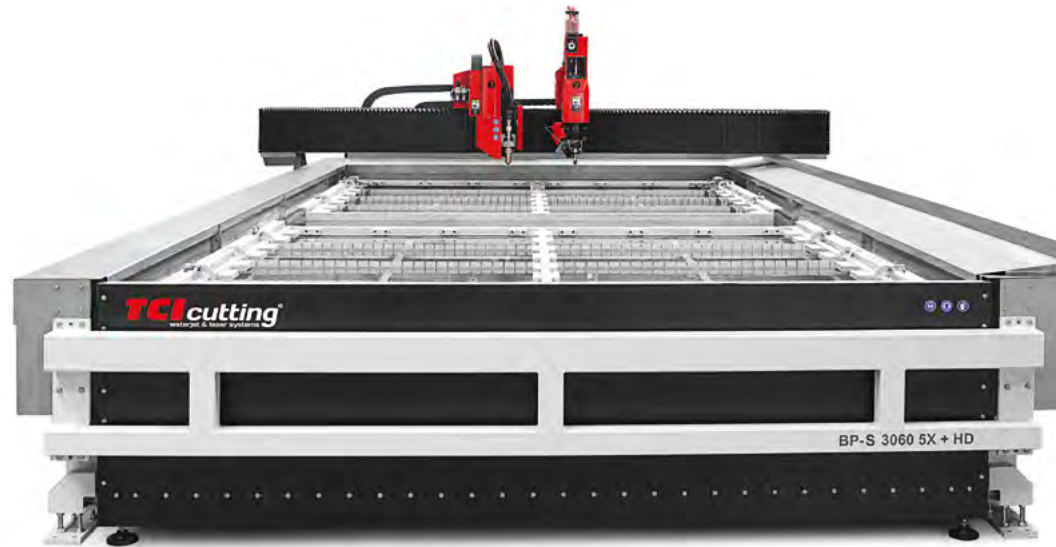


The **TCI Cutting**, cutting machines offer functional, precise and profitable equipment for all standard applications.

Maximum performance with minimal investment and maintenance.

Models	Dimensions	Characteristics	Technical Data
BP-C 4020	4000x2000x200 mm	Maximum thickness of the workpiece	200 mm
		Maximum permitted load	790 kg/m <sup>2</sup>
		Number of cutting heads	1 to 2
		Maximum simultaneous positioning speed	70 m/min
		Maximum cutting speed	20 m/min
		Machine tolerance in accordance with VDI/DGQ 3441	± 0.05 mm/m
		Repeatability precision	± 0.025 mm/m

# BP-S<sup>®</sup> (Standard) Series



**Flexibility and adaptability** are key to remain competitive in today's market where new challenges are constantly posed. This is why **TCI Cutting** has developed the BP-S Series.

The modular construction of these machines facilitates transport and offers customers greater flexibility, allowing future expansions by adding new modules, a second head or a new bridge with more heads.

The possibilities to adapt the configuration of the machine to the customer's needs are endless.

Models	Dimensions
BP-S 3015	3000x1500x200 mm
BP-S 3020	3000x2000x200 mm
BP-S 2040	2000x4000x200 mm
BP-S 3060	3000x6000x200 mm
BP-S 3080	3000x8000x200 mm
BP-S 4060	4000x6000x200 mm
BP-S 4080	4000x8000x200 mm

Characteristics	Technical Data
Maximum thickness of the workpiece	200 mm
Maximum permitted load	790 kg/m <sup>2</sup>
Number of cutting heads	1 to 4
Maximum number of bridges	4
Maximum simultaneous positioning speed	70 m/min
Maximum cutting speed	20 m/min
Machine tolerance in accordance with VDI/DGQ 3441	± 0.05 mm/m
Repeatability precision	± 0.025 mm/m

# BP-M<sup>®</sup> (Modular)

## Series



**Robustness and flexibility**, this series incorporates the advantages of the standard series, with the added strength that is required by very demanding customers in order to cut thick and large surface area materials.

Models	Dimensions
BP-M 2040	2000x4000x200 mm
BP-M 3020	3000x2000x200 mm
BP-M 3060	3000x6000x200 mm
BP-M 3080	3000x8000x200 mm
BP-M 30120	3000x12000x200 mm
BP-M 4060	4000x6000x200 mm
BP-M 4080	4000x8000x200 mm
BP-M 40120	4000x12000x200 mm

Characteristics	Technical Data
Maximum thickness of the workpiece	200 mm
Maximum permitted load	1.000 kg/m <sup>2</sup>
Number of cutting heads	1 to 4
Maximum number of bridges	4
Maximum simultaneous positioning speed	70 m/min
Maximum cutting speed	20 m/min
Machine tolerance in accordance with VDI/DGQ 3441	± 0.05 mm/m
Repeatability precision	± 0.025 mm/m

# BP-H<sup>®</sup> (High) Series



**Flexibility and adaptability** are key in order to remain competitive in today's market where new challenges are constantly posed. This is why **TCI Cutting** has developed the BP-H series.

This series is characterized by maximum height control on the Z axis up to 500 mm, resulting in a unique versatility to meet customer requirements.

The possibilities to adapt the configuration to the customer's needs are endless.

Models	Dimensions
BP-H 3015	3000x1500x500 mm
BP-H 3020	3000x2000x500 mm
BP-H 2040	2000x4000x500 mm
BP-H 3060	3000x6000x500 mm
BP-H 3080	3000x8000x500 mm
BP-H 4060	4000x6000x500 mm
BP-H 4080	4000x8000x500 mm

Characteristics	Technical Data
Maximum thickness of the workpiece	200 mm
Maximum permitted load	790 kg/m <sup>2</sup>
Number of cutting heads	1 to 4
Maximum simultaneous positioning speed	70 m/min
Maximum cutting speed	20 m/min
Machine tolerance in accordance with VDI/DGQ 3441	± 0.05 mm/m
Repeatability precision	± 0.025 mm/m



# SM<sup>®</sup> series





# SM Series

## Flexibility and accessibility

The **TCI Cutting**, SM machine series have the cutting head mounted on very stable and robust mechanical fly-arm.

This cutting system offers maximum accessibility to the work area and requires very little space for installation.

**TCI Cutting** offers 3 models of SM machines:

- **SM-C** Series (Compact)
- **SM-S** Series (Standard)
- **SM-M** Series (Modular)



The SM-C series machine has been developed as **versatile cutting machine that is easy to install and transport**. It fulfills the most demanding cutting requirements at an **unbeatable price-performance ratio**.

This series of waterjet cutting machines offers customers the possibility to install it themselves without having to resort to installation or assembly by a specialist. Customers can directly setup the water jet cutting machine quickly and easily.

Models	Dimensions
SM-C 3015	3000X1500X200 mm

Characteristics	Technical Data
Maximum thickness of the workpiece	200 mm
Maximum permitted load	790 kg/m <sup>2</sup>
Number of cutting heads	1
Maximum simultaneous positioning speed	60 m/min
Maximum cutting speed	20 m/min
Machine tolerance in accordance with VDI/DGQ 3441	± 0.05 mm/m
Repeatability precision	± 0.025 mm/m



**Profitability and accessibility** are the principal characteristics of these machines, capable to satisfy most common cutting requirements.

It offers the possibility to use multiple cutting arms independently while cutting any geometric shape.

Models	Dimensions
SM-S 3015	3000X1500X200 mm
SM-S 3020	3000x2000x200 mm
SM-S 4020	4000x2000x200 mm
SM-S 6020	6000x2000x200 mm

Characteristics	Technical Data
Maximum thickness of the workpiece	200 mm
Maximum permitted load	790 kg/m <sup>2</sup>
Number of cutting heads	1
Maximum simultaneous positioning speed	60 m/min
Maximum cutting speed	20 m/min
Machine tolerance in accordance with VDI/DGQ 3441	± 0.05 mm/m
Repeatability precision	± 0.025 mm/m





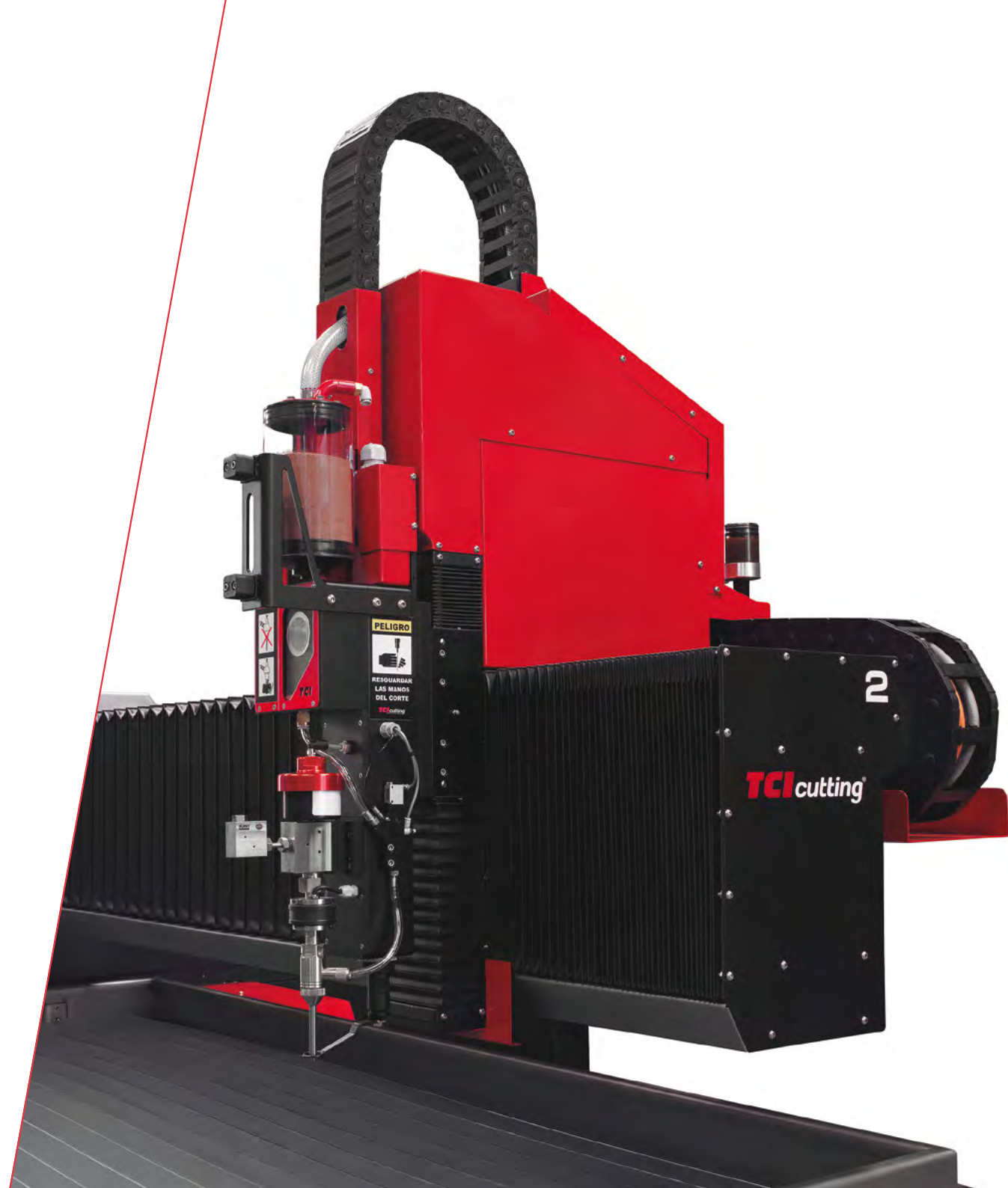
The **TCI Cutting** SM-M series machine allows both the installation of a second independent cutting table as well as the extension of the main cutting table, thereby maximizing performance.

The SM-M Series also offers the **option of enclosure** to facilitate clean and silent functioning and **occupying minimal space** in the cutting center.

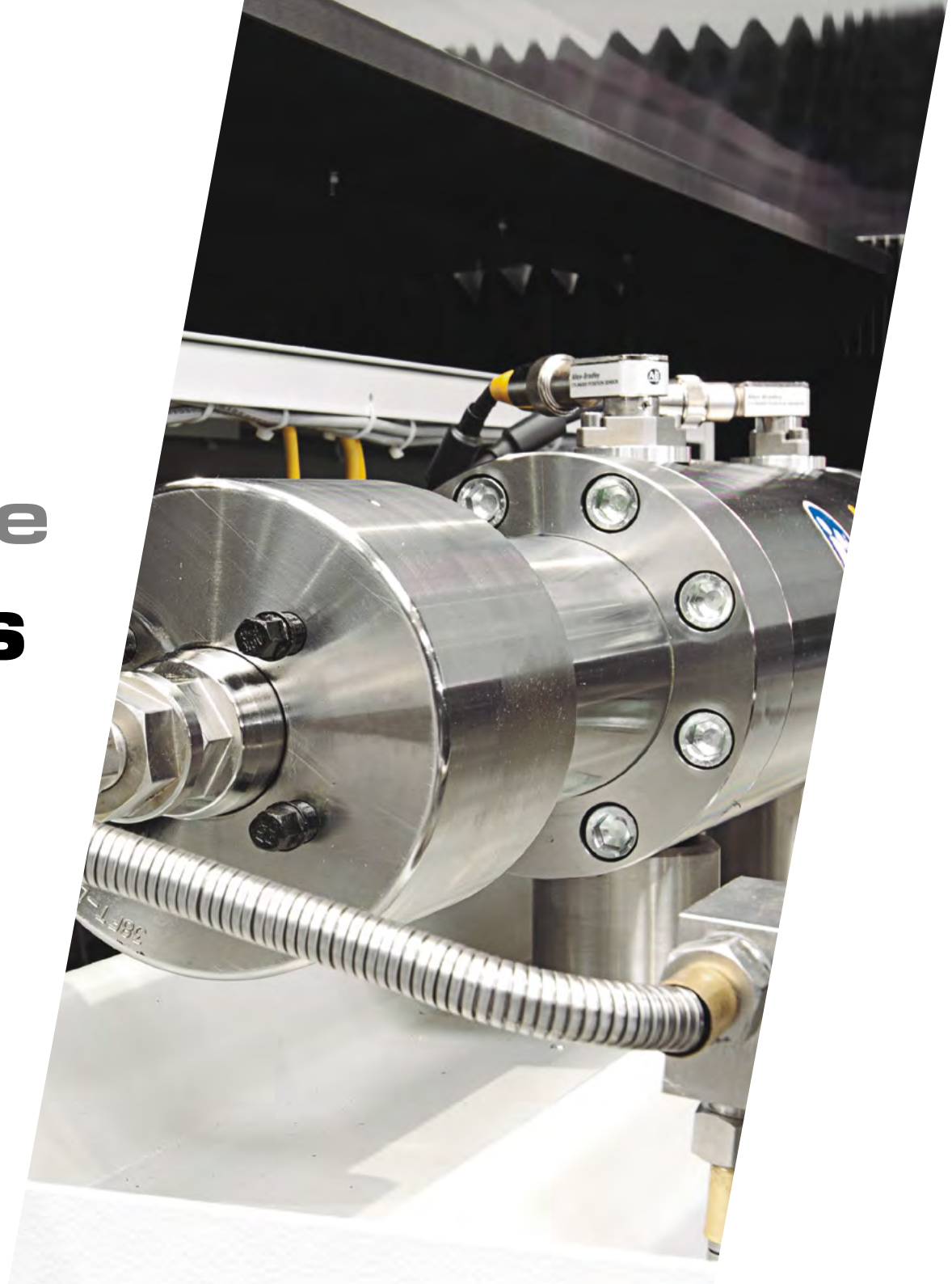
A unique feature of this machine is its ability to cut using two independent cutting arms, located in two different work areas.

Models	Dimensions
SM-M 3015	3000X1500X200 mm
SM-M 3020	3000x2000x200 mm
SM-M 4020	4000X2000X200 mm
SM-M 6020	6000x2000x200 mm

Characteristics	Technical Data
Maximum thickness of the workpiece	200 mm
Maximum permitted load	790 kg/m <sup>2</sup>
Number of cutting heads	1 to 2
Maximum simultaneous positioning speed	60 m/min
Maximum cutting speed	20 m/min
Machine tolerance in accordance with VDI/DGQ 3441	± 0.05 mm/m
Repeatability precision	± 0.025 mm/m



# High pressure Pumps



# High pressure pumps

## DIRECT DRIVE 3800

Direct drive pumps are recommended in applications that prioritize the flow over the cutting pressure, especially in the multi-head low pressure.

This type of pump uses an electric motor that produces the crankshaft rotation, and three or more pistons to generate the cutting water pressure and flow rate.

### Characteristics:

- High cutting flow at low pressure.
- Does not need refrigeration equipment.
- Indicated for low pressure cutting where there is delamination.



TCI Cutting DIRECT DRIVE 3800							Maximum number of nozzles		
NOMINAL POWER (hp)	WORKING PRES-SURE (bar)	MAXIMUM WATER FLOW (l/m)	LENGTH (mm)	WIDTH (mm)	HEIGHT (mm)	WEIGHT (Kg)	Ø0,25 mm	Ø0,30 mm	Ø0,35 mm
30	Up to 3500	3,1	1.400	1.000	1.600	450	2	1	1
40	Up to 3800	6,4	1.860	1.300	1.700	730	3	2	2



## SL-VI 4100

The latest generation of SL-VI pumps offers the most advanced waterjet technology with working pressures up to 4,100 bar, allowing higher speeds cutting and obtaining cleaner cuts.

### Characteristics:

- Pumps for any type of cutting and installation.
- Suitable for both pure water and abrasive cutting.
- Innovations of the HSEC intensifier that fix the check valve at the end of each side reduce wear and service costs.
- The accumulator larger size allows to maintain constant pressure even at high levels of work.
- Powers up to 200 HP.



TCI Cutting SL-VI 4100										Maximum number of nozzles			
NOMINAL POWER (hp)	WORKING PRESSURE (bar)	MAXIMUM WATER FLOW (l/m)	ACCUMULATED CAPACITY (l)	TANK CAPACITY (l)	FLOW HYDRAULIC PUMP	LENGTH (mm)	WIDTH (mm)	HEIGHT (mm)	WEIGHT (Kg)	Ø0,17 mm	Ø0,25 mm	Ø0,33 mm	Ø0,35 mm
30	500-3800	2,6	1	178	40	1.689	1.114	1.477	1.131	2	1	-	-
40	500-3800	2,7	1	144	39	1.436	1.167	1.005	975	3	1	1	-
50	500-3800	4,3	1	178	62	1.689	1.114	1.477	1.302	4	2	1	1
50 P	500-4136	4,1	2	178	60	1.689	1.114	1.477	1.324	4	2	1	1
100	500-4136	7,6	2	231	79	2.095	1.320	1.508	2.128	8	4	2	2

# High pressure pumps

## STREAMLINE 6200

The Streamline PRO 6200 products range provide a breakthrough in the waterjet cutting world, with working pressures up to 6,500 bar.

It contains all the necessary components, from the high pressure generation to the nozzle, which guides the cutting jet over the selected material. The pressure of 6,200 bar. represents an increase of almost 50% of the conventional pressure range.

### Characteristics:

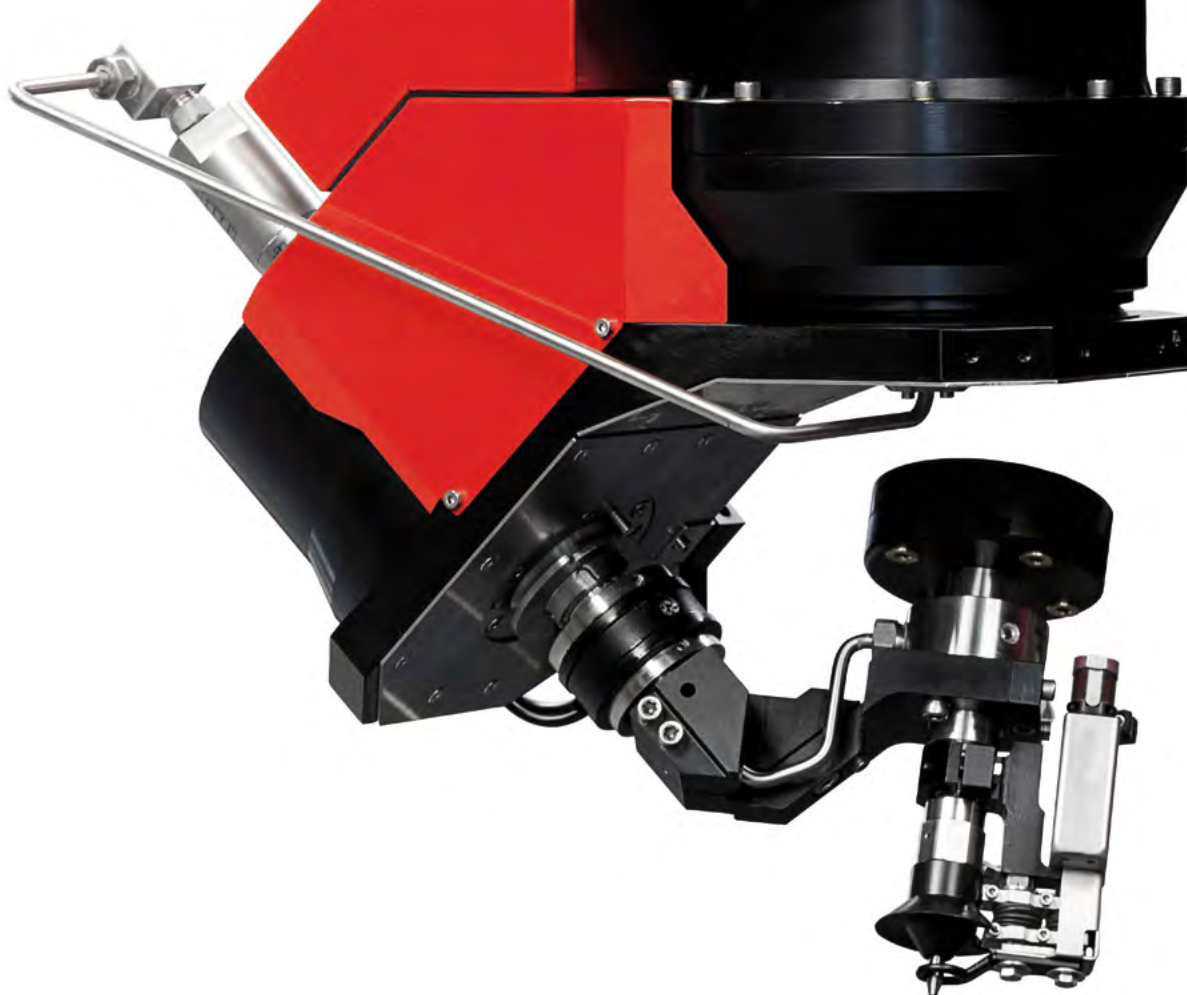
- Increased cutting speeds.
- Improved cutting quality.
- Reduced consumption of abrasive



TCI Cutting Streamline Pro 6200										Maximum number of nozzles			
NOMINAL POWER (hp)	WORKING PRESSURE (bar)	MAXIMUM WATER FLOW (l/m)	ACCUMULATED CAPACITY (l)	TANK CAPACITY (l)	FLOW HYDRAULIC PUMP	LENGTH (mm)	WIDTH (mm)	HEIGHT (mm)	WEIGHT (Kg)	Ø0,17 mm	Ø0,25 mm	Ø0,33 mm	Ø0,35 mm
60	800-6200	2,8	1,6	231	54	2.095	1.320	1.973	2.130	2	1	1	-
125	800-6200	6,0	1,6	416	2x54	2.238	1.500	1.552	3.107	5	2	1	1

# Accessories





# Kit TCI CUTTING 5XDD V4.0

5 axis cutting head

Cutting head that allows cutting angles up to 90°.

Allows 3D cutting.

Patented design.

Unrestricted rotation, which saves time and maximizes machine performance.

## Accessories

### TCI ABRASIVE 3.0

#### Abrasive regulation

Automatic abrasive regulation system incorporating a continuously regulated motor automatically delivering the required quantity of abrasive through a real-time controlled channel, enabling the exact quantity to be dispensed at all times, eliminating traditional manual regulation. This is controlled by the machine interface and stops if it detects that the abrasive has been used up. It is ideal for cutting fragile and composite materials.



### TCI CUT CONTROL 2.0

#### Autonomous cutting system

Abrasive “nonreturn” system that allows the autonomous operation of the machine. If a jam in the cutting process occurs, it prevents water and abrasive rising up and wetting the hopper. It also incorporates the new 2.0 CUT CONTROL system to resume the cutting process in case of a jams. Cutting restarts automatically at the last perforation and it automatically unclogs the nozzle.



### TCI COLLISION PROTECTION 2.0

#### Anti-Collision system

Electronic collision control system for the cutting heads, enabling electronic regulation of the detection sensitivity for each the cutting heads. This system is unique in the market, as it is totally independent from the height regulation system and guarantees reliable detection of the impact on the nozzle due to lifting of the material and other occurrences, stopping the machine before any damage can occur.





# Accessories

## TCI ABRALINE 1.0

Autonomous abrasive feeder

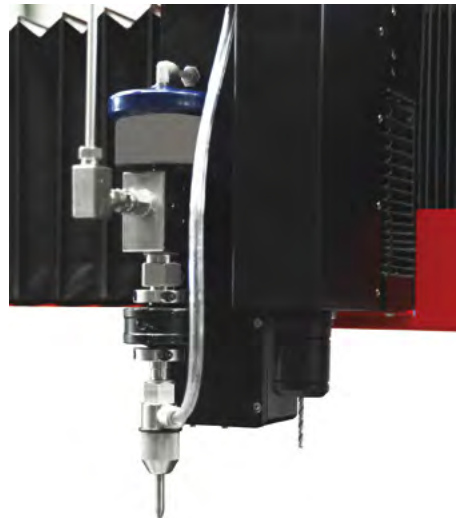
Automatic abrasive dosing during the cutting process. This system provides a low pressure pneumatic abrasive feed to the autonomic regulation system incorporated in the hopper of the cutting head. It also incorporates warning sensors if the abrasive level is low and can be refilled without interruption to the cutting process. It is fully accessible by the user and has a capacity of 200 l.



## TCI DRILL 2.0

Drilling System

Equipment developed for mechanical pre-drilling fragile materials and multi-laminated composites that might be damaged by waterjet perforation. Possibility to mount different drill bit diameters.



## TCI EXTRACTION SYSTEM 2.0

Sludge cleaning

Sludge cleaning system unique in the market, fully automatic and maintenance free. Collects the sludge from the cutting tank, separates the water from the sludge and recirculates the water back into the tank so that the water level is constantly maintained. It provides the customer continuous operation of the cutting machine and it avoid machine stops to clean the tank. The system ensures perfect extraction with no moving parts inside the tank. It includes the extraction system and a collection container.



## Accessories

### TCI BULK TANK 2.0

2.000 kg capacity  
hopper

2.000 kg capacity hopper for machines requiring high production output. Continuous feed for the TCI ABRALINE 1.0 system, preventing unnecessary stops and above all allowing autonomous functioning of the machine during lengthy cutting procedures.



### TCI CHILLER 50HP

Water cooling system

The cooling system for the hydraulic oil of the intensifier pumps with a closed water circuit is ideal for warmer regions, ensuring correct operating temperature even in the summer months. It also eliminates the cost of cooling water since it is a closed circuit. A gas is used to cool the water that is constantly recirculated.



### TCI HIDRO SYSTEM 2.0

Water treatment  
equipment

In order to extend the operation life of the high pressure components, the treatment system conditions the water before entering the intensifier, eliminating calcium and guaranteeing a constant pressure. It consists of a water softener, a salt deposit and a stainless steel pressure pump. It is especially useful in areas where water has high levels of calcium.



# Accessories

## TCI SRA 3.0

Height regulation  
system

Electronic height regulation system for the cutting head ensures constant distance between the nozzle and the cutting material, offering the possibility to cut materials with uneven surfaces.

The system offers various configuration possibilities: regulating for distance, perforation, time or continuous regulation.



## TCI LASER 1.0

Laser pointer

Laser pointer for exact positioning of the reference points on the material to be cut.

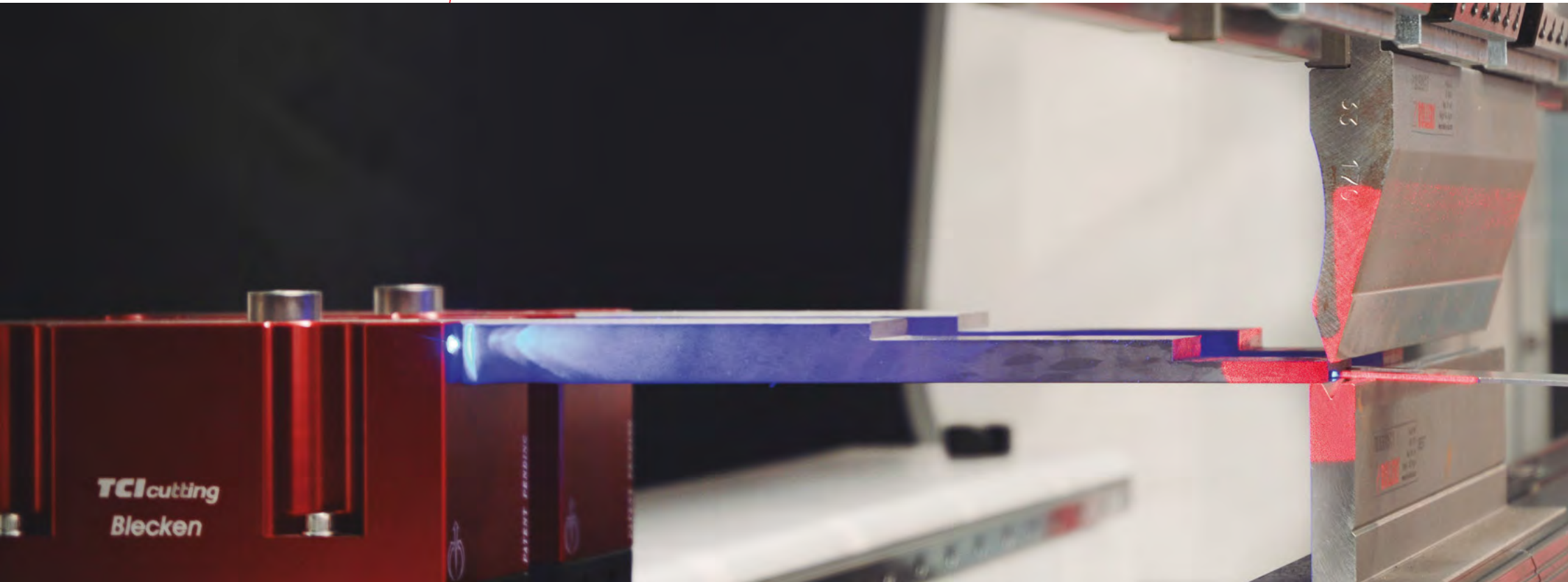


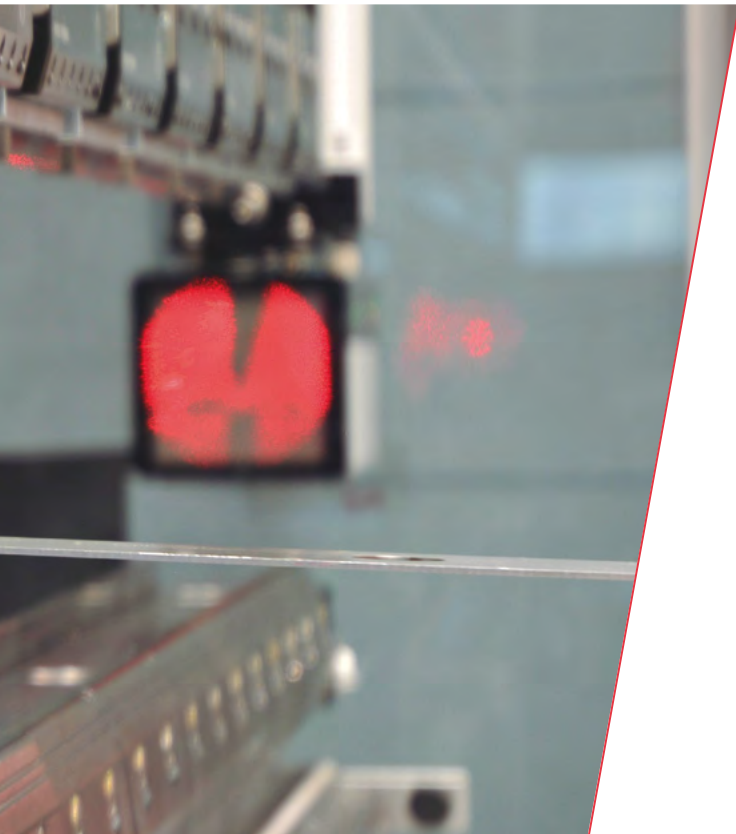
## TCI JET CONTROL 1.0

Allows the elimination of conicity or taper on the parts being cut, by means of a tangential cutting function programmed in the CNC system to transform it to 5 axes.



# The best **bending** **solution**





**TCI**cutting®  
waterjet & laser systems

**Blecken**®  
bending experts

United we stand, therefore **TCI Cutting** and **Blecken** join forces to create our industrial Bending division.

With the strength of **TCI Cutting** and the tons of experience of **Blecken**, we have created the industrial press brake series "Mach", three models to meet the requirements of the industrial bending sector.

- Perfect configuration for precise bends
- Precision bends over the entire length
- Pumping system for the lower table
- Highly rigid design
- Easy and economical maintenance



# TCI Cutting BENDING DIVISION

The Mach series press brakes are designed to meet the bending needs of customers at very competitive prices, with their advanced electrical and mechanical characteristics.

They help to increase productivity and keep costs at a minimum, with an easy to use CNC and low hydraulic maintenance costs.

The new press brakes by TCI Cutting are ideal for complicated, precise, unique or repetitive high speed bending.

All TCI Cutting machines are designed to use the latest technology and the best material.





The use of synchronized valves ensures the best bending quality.

The reference position is automatically calibrated at the startup of the machine. Thanks to the use of ball bearings, positioning accuracy is 0.01mm. The servomotors are managed by the CNC providing a mechanical precision of 0.05mm.

With our vast experience and industry knowledge, we have incorporated as a standard on our machines, all the equipment necessary to provide flexibility and speed that allows customers to minimize production costs.



# Mach One<sup>®</sup>

series





## General Characteristics

- Cylinders treated with and coated in chrome with high accuracy of 0,001mm
- Quick tightening clamps
- Front support arms slidable along the length of the machine
- Central hydraulic system from HOERBIGER according to CE standards
- Two photocells on the back
- High quality tools
- Linear optical rulers with a precision of  $\pm 0.01$  mm
- Fully synchronized cylinders that provide the best bending on all occasions
- Back gauge system with 2 axes (X = 800 mm and R), with  $\pm 0.01$  mm. repeatability, controlled by CNC
- DELEM D66T CNC Control
- SIEMENS electrical components
- Automatic axis referencing when the machine is running
- Side protection according to CE standards

## Mach One 3175 175T

Characteristics	Technical data
Bending length	3000 mm.
Distance between columns	2600 mm.
Power of the machine	175 tons
Throat depth	410 mm.
Stroke length	275 mm.
Maximum distance between table and punch	550 mm.
Back gauge range	800 mm.
Working height	900 mm.
Approach speed (adjustable)	180 mm/sec.
Bending speed (adjustable)	12 mm/sec.
Return speed	190 mm/sec.
Motor power	15 kW
Oil capacity	300 l.
Approximate Weight	10 tons

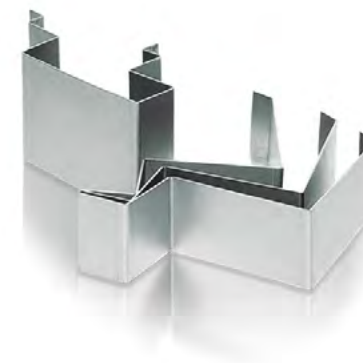




# Mach One 4022 220T

Characteristics	Technical data
Bending length	4000 mm.
Distance between columns	3400 mm.
Power of the machine	220 tons
Throat depth	410 mm.
Stroke length	275 mm.
Maximum distance between table and punch	550 mm.
Back gauge range	800 mm.
Working height	900 mm.
Approach speed (adjustable)	180 mm/sec.
Bending speed (adjustable)	12 mm/sec.
Return speed	190 mm/sec.
Motor power	20 kW
Oil capacity	320 l.
Approximate Weight	13 tons





## Mach One<sup>®</sup> series

### Machine configuration

Bending table of 3.100mm.

Bending table of 4.100mm.

DELEM D66T-2D numerical control with color graphics.

6 axis (Y1-Y2-X-R-Z1-Z2) with backstop.

Punches treated to 140 kg. 835 mm sections over the entire length of the machine.

One equal punch split into several sections with side anvils.

Matrix with 4 60mm wide mouths in 855 sections over the entire length of the machine.

Driver to adapt and center matrices.

Motorized Wila type compensation table adjustable from the control.

Two frontal sheet supports.

Safety regulations by laser.

Pneumatic upper and lower flanges.



## Standard Equipment

- Backstop with 6 axes. (Y-1, Y-2, X, R, Z1, Z2)
- Adjustable height, sliding arms with front supports
- High quality upper and lower tools with heat treatment
- European Style clamping system
- Rear stops controlled by the CNC
- Throat depth of 410 mm
- Backstop with 2 clamps
- Linear rulers for axis control Y1 - Y2
- Motorized table compensation system controlled by CNC
- Pedal according to CE standards
- 2 photocells on the back of the machine
- Fully protected upper cylinders
- Delem D66 T control

## Optional Equipment

- Choice of different lengths punches and dies
- Hydraulic oil cooler
- Variable table width and different V dies
- Front laser option
- WILA type clamping system
- Hydraulic or pneumatic upper and lower clamping system
- Special tools to fold thick materials
- Additional front supports
- Front sheet follower

# Mach Five<sup>®</sup> series





## Main Characteristics

- Color graphics for numerical control.
- Security photocells.
- Silent internal pump.
- Hydraulic system regulated by synchronized valves.
- High precision optical lines.
- Adjustable fast mooring.
- Tooling, hardened and rectified for quick adjustment of tooling.
- System of rear stops (fingers) with double linear guide, contact LED indicator.
- Hydraulic active compensation system.
- High quality components electrical panel.
- Start & Stop system.
- Hybrid system for energy saving.
- Model prepared for all types of automations.





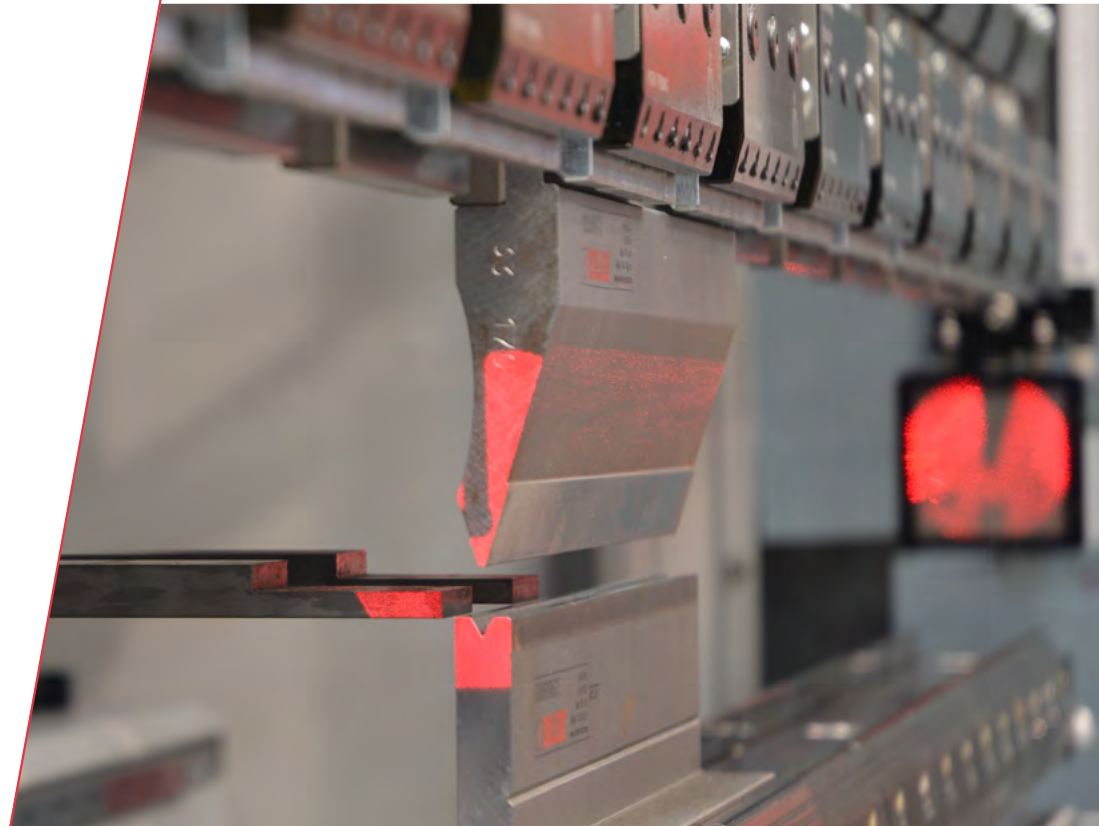
Characteristics	30T	50T		70T	110T					
Press force	30	50	50	70	110	110	110	110	110	tons
Bending length	1250	1670	2100	2600	2600	3100	4100	5100	6100	mm.
Distance between columns	1200	1300	1600	2100	2100	2600	3600	4600	5600	mm.
Throat depth (outgoing)	0	300	300	400	400	400	400	400	500	mm.
Travel of cylinder / piston	150	200	200	300	300	300	300	300	300	mm.
Maximum table-beam distance	340	400	400	500	500	500	500	500	500	mm.
Back gauge range	800	800	800	800	800	800	800	800	800	mm.
Working height	905	950	950	950	950	950	950	950	1075	mm.
Fast approach	200	200	200	200	200	200	200	180	150	mm/sec.
Maximum work rate	0-10	0-10	0-10	0-10	0-10	0-10	0-10	0-10	0-10	mm/sec.
Return speed	200	200	200	200	200	200	180	160	130	mm/sec.
Motor power	3	5,5	5,5	11	15	15	15	15	15	kW.
Oil capacity (oil not included)	25	40	40	100	100	100	100	100	100	l.
Approximate Weight	3	3,8	4,2	8,5	8,5	10	12,3	14,6	15,9	tons

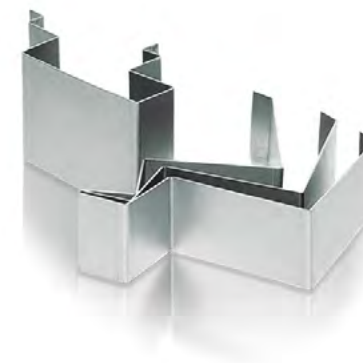
## Mach Five configurations

Characteristics	170T					250T				320T				
Press force	170	170	170	170	170	250	250	250	250	320	320	320	320	tons
Bending length	2600	3100	4100	5100	6100	3100	4100	5100	6100	3100	4100	5100	6100	mm.
Distance between columns	2100	2600	3600	4600	5600	2600	3600	4600	5600	2600	3600	4600	5600	mm.
Throat depth (outgoing)	500	500	500	500	500	500	500	500	500	500	500	500	500	mm.
Travel of cylinder / piston	300	300	300	300	300	300	300	300	300	300	300	300	300	mm.
Maximum table-beam distance	500	500	500	500	500	500	500	500	500	500	500	500	500	mm.
Back gauge range	800	800	800	800	800	800	800	800	800	800	800	800	800	mm.
Working height	950	950	950	950	1075	965	965	985	1075	965	965	965	965	mm.
Fast approach	200	200	200	180	150	200	200	160	150	180	180	150	150	mm/sec.
Maximum work rate	0-10	0-10	0-10	0-10	0-10	0-10	0-10	0-10	0-10	0-8,5	0-8,5	0-8,5	0-8,5	mm/sec.
Return speed	200	200	200	160	130	180	180	150	120	180	180	140	120	mm/sec.
Motor power	18,5	18,5	18,5	18,5	18,5	30	30	30	30	30	30	30	30	kW.
Oil capacity (oil not included)	150	150	150	150	150	200	200	200	200	200	200	200	200	l.
Approximate Weight	10	12,1	15	18,7	22	16,1	20	27	33	18,5	22	28,7	35	tons



# Mach Five<sup>®</sup> series





## Mach Five<sup>®</sup> series

### Machine configuration

Hybrid energy saving system ENERGY EFFICIENT (up to 50%).

Esautomation S650 numerical control.

4 axis (Y1-Y2-X-R) + 4 optional (Z1-Z2-X5-X6) with back gauge.

Safety regulations by Lazer Safe.

Pneumatic upper and lower clamping.

Silent hydraulic pumps.

Die with 4 sides by Rolleri (v=16-22-35-50).

Rolleri punch h=135 · angle = 85° · beam=0,8 · load=100T/m





## Standard equipment

- Back gauge with 4 axes (Y-1, Y-2, X, R)
- Height adjustable, sliding front support arms
- Heat treated high quality upper and lower tools
- European Style clamping system
- Back gauge controlled by the CNC
- Throat depth of 300 to 500mm
- Back gauge with 2 fingers
- Lazer Safe
- Flex system
- Pedal according to CE standards
- Fully protected upper cylinders
- Esautomation S650 control
- VOITH pump
- GIVI optical lines
- HOERBIGER plumbing
- Electrical cabinet: TELEMECANIQUE-SCHNEIDER, ESAUTOMATION

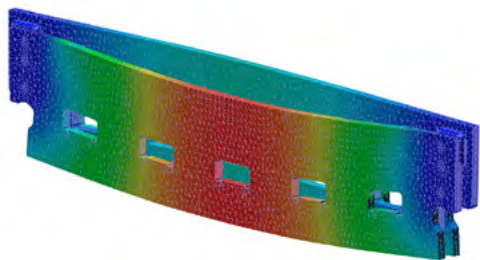
## Optional equipment

- Additional axes Z1 and Z2
- Additional axes X5 or X6
- European Style upper and lower clamping
- Wila Pro upper clamping
- Wila Premium upper clamping
- Wila lower clamping
- Hydraulic unit
- Pneumatic locking table
- Additional gauge
- Frontal fine sheet follower
- Oil cooling system
- Kit Iris Plus - Lazer Safe
- Kit Clever Crowning, pumped via CNC active compensation system
- Numerical Control (CNC) ESA S650W
- Active compensation system Clever Crowning

## Mach Five options

### CLEVER CROWNING

With the Clever Crowning system, the CNC independently interprets the bending angle correction without operator intervention. This ensures a perfect bend, even on irregular surfaces.



### RETRACTABLE BACK GAUGES

This option provides support for thin sheets when the bend is far from the edges. The retractable back gauges can be activated via the CNC.



### FLEX

Innovative system for managing structural deflections, which ensures perfect bending over the entire length, regardless of the length of the sheet. The CNC receives data from the sensors of the cylinders, this information is interpolated to correct the required parameters.

### Kit IRIS PLUS

Speed and accuracy, by means of the multipoint laser sensor, the change in velocity is 0mm from the contact with the part and the angle control system ensures a high quality result from the first bend. The Iris Plus system takes a frame every millisecond, for the perfect bending control.



**TCIcutting**  
waterjet & laser systems

**Blecken**  
bending experts

**Mach Five 3017**  
energy efficient

**TCIcutting**





# ESA S650W

Human • machine interface

Versatile PC, 15" high resolution touch screen 4:3.

Unlimited flexibility and performance.

The strong built-in processor allows comfortable working in a 3D environment (Metalix, Radan, Esa).

Direct import of parts (.dxf files) and tools library manager.

Manager for tools, punches and dies.

Angle measurement and correction with most available devices.



## General specifications

High resolution 15" touch screen 4:3 (XGA 1024x748).

CPU PC: AMD Embedded GX 420 CA 2GHz with 4GB RAM.

CPU CNC: AMD LX-LX800 500MHz with 128MB RAM.

FPGA integrated logics, surface mounting, fiber optic.

Ergonomic aluminum enclosure with panel that includes buttons and direct access switches.

20GB Hard Drive 2.5" (expandable).

Preset for standard pc keyboard and mouse (ps2 standard connectors).

# CNC

## Delem DA-66T

Human • machine interface

2D Touchscreen.

Displaying the part in 3D, both in simulation and production.

High resolution 17" TFT screen.

Compatible with Windows applications.

Two USB ports.

Multitasking environment.

Bending sensor with correction via interface.

Emergency Stop button.

### Standard:

Screen resolution 1280 x 1024, 32 bit.

256 MB Storage capacity.

3D graphics card.

Work online with Standard Windows®

Integrated OEM Panel.

Multi language interface.

### Programming:

Easy configuration of products and tools.

Programming and visualization of the product in actual scale.

Automatic calculation of the bending sequence.

Easy modification of the bending sequence.

Possibility to program Hemming operations.

Programmed table on a single screen.





INDUSTRIA4.0  
smartcompany

**PRO**manager®

In addition to designing and manufacturing intelligent machines, TCI Cutting has opted to make the leap to the digitization of its production process. Our company also wants to make Industry 4.0 available to its customers thanks to Promanager and Smarttouch, two powerful manufacturing management software developed by TCI Cutting with the aim of optimizing the use of our cutting machines in a fully digitalized industrial environment. With PROmanager and Smarttouch our customers can configure a factory 4.0 with optimized production.

### **PROManager** **The industrial integration software of TCI Cutting**

Tools such as PROManager make it possible for companies to move forward with the Industry 4.0 revolutionizing the companies reality. This software brings together all the information a company needs, from employees to processing of materials, stock and shipping.

PROManager digitally connects with all the company elements, collecting and sending data and information, thus achieving control and optimization of each of the processes. The final result will always be a greater company profitability.

PROManager features:

- Stocks control, customers and suppliers.
- Unlimited number of users
- Unlimited number of work centers
- Statistics by work center and performance.
- Performance statistics.

## Configuración Mantenimiento

Puedes consultar y ajustar todos los centros para el m...

### Departamento de Mantenimiento

Centro:

Nueva Tarea:

Número de horas por...

Número de piezas / o...

Consumibles

Tarifa

[+ Añadir](#)

## 5 - CAD/CAM LASER

Centro Funcionando

32 órdenes iniciadas



Seleccionar archivo Ningún archivo seleccionado

Carga de Trabajo Actual 32/273 Órdenes

Próximo Mantenimiento dd/mm/aa

Actividad últimas 24H



[Detalles](#)

## 12 - LASER2 2 - 5200W ..

Centro Parado

Sin Actividad

## 6 - CAD/CAM WATERJET

Centro Parado

Sin Actividad

## 10 - CORTE LASER

Centro Parado

Sin Actividad

## 11 - LASER 1 - FIBRA 4...

Centro Parado

Sin Actividad

### Órdenes de trabajo pendientes

1525  
Total órdenes pendientes

### Centros

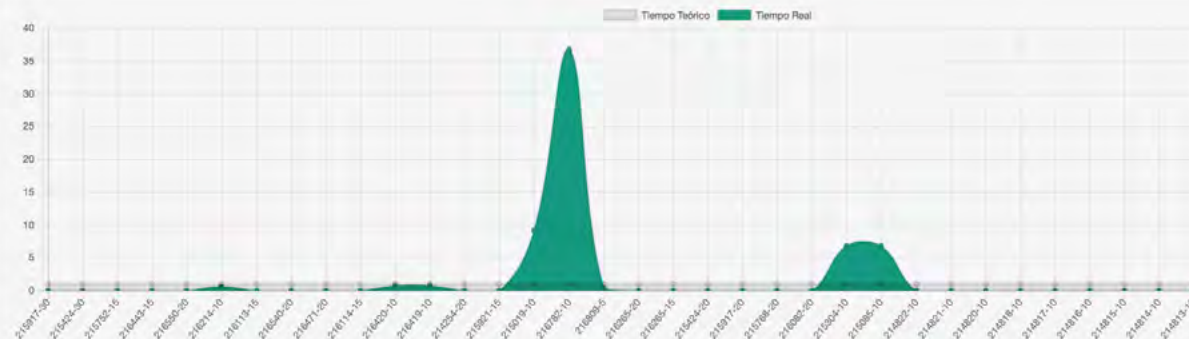
51  
Total centros

### Usuarios

70  
Total usuarios

1157  
Total componentes

### Productividad Tiempo Real



### Información General

[i](#) [x](#)

[i](#) [x](#)



## Gestión de usuarios

Total usuarios: 70

Nombre de Usuario	Apellidos	Perfil / Roles
Adri	Soldadura	PERFIL_JEFE_DE_EQUIP
Adri	Láser	PERFIL_OPERARIO, R
Agustin	Periféricos	PERFIL_JEFE_DE_EQUIP
Andrea	Presupuestos	PERFIL_COMERCIAL, R
Antonio	Láser	PERFIL_OPERARIO, RC
Antonio	Plegadora	PERFIL_OPERARIO, RC
Cano	Pintura	PERFIL_OPERARIO, RC
Carlos	Láser	PERFIL_OPERARIO, RC
Chema	Pintura	PERFIL_OPERARIO, RC
Cientes	Externo	ROLE_CALENDARIO_PI
Cristian	O.Técnica	PERFIL_JEFE_DE_EQUIP
Cristian	Láser	PERFIL_JEFE_DE_EQUIPO, ROLE_USER,
Dani	Logística TCI	PERFIL_EXPEDICION, ROLE_RECEPCIONAR_PEDIDOS, ROLE_USER,
David	Plegadora	PERFIL_OPERARIO, ROLE_USER,

# SMARTTOUCH HMI V 6.0

## Human Machine Interface

New and very intuitive interface offering all functions to manage the machine. It incorporates the possibility to change and program cutting parameters, allows constant controlling of the peripherals, consumables, etc. It allows continuous visual monitoring of the cutting program status, with color indication of the status of the pieces, as well as the possibility to move pieces and edit the program.



SMARTTOUCH is an agile and intuitive software that facilitates the operability of the personnel involved in the manufacturing process and connects them digitally with the rest of the elements of the company, collecting and sending data of the industrial processes.

The combination of our machines with these specialized software solutions enables fully integrated digital manufacturing into the innovations of Industry 4.0.

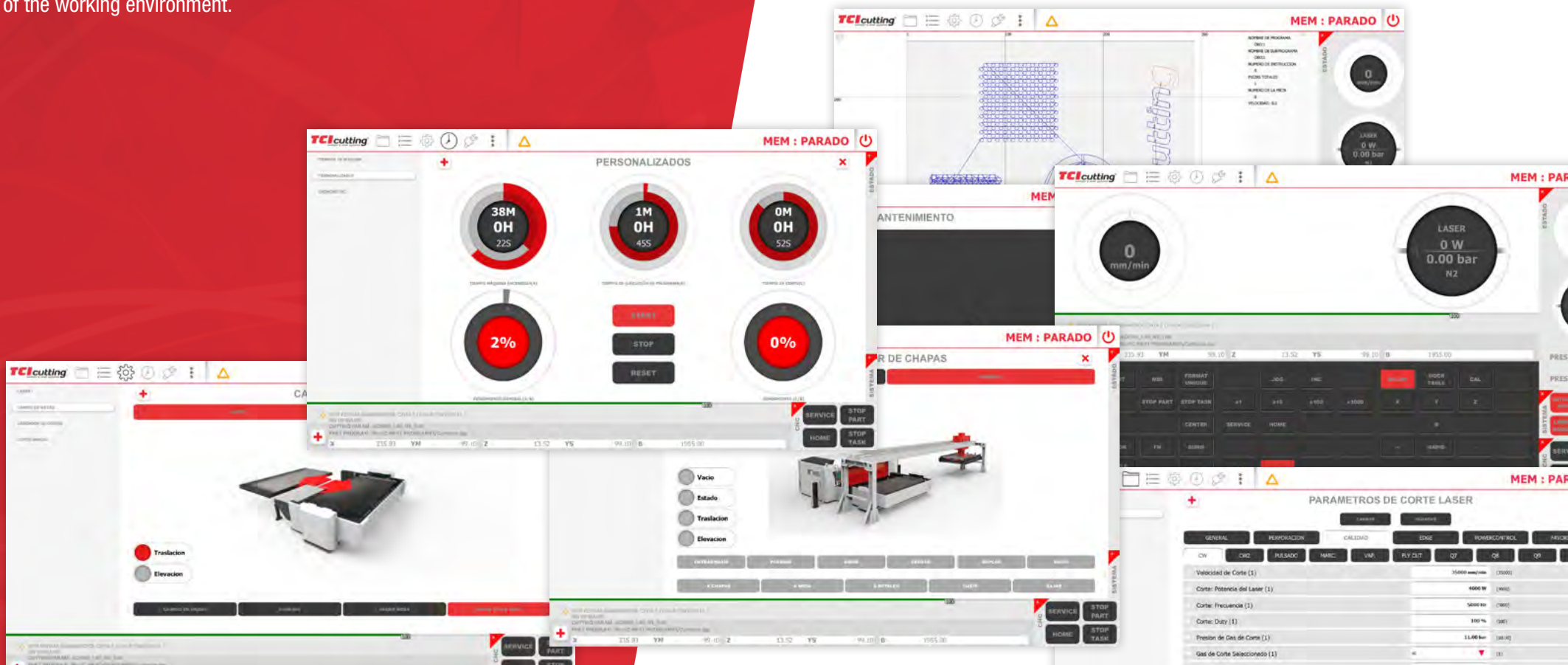


## SMARTTOUCH the HMI from TCI Cutting

The TCI Cutting engineers have created SMARTTOUCH, the HMI from TCI Cutting, from the experience of manufacturing our waterjet and laser cutting systems. An agile and intuitive software that makes life easy for the operators.

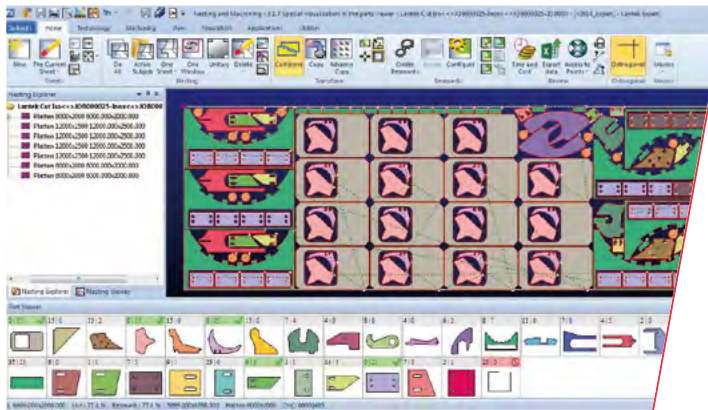
SMARTTOUCH is the cutting process tool that integrates perfectly in INDUSTRY 4.0. SMARTTOUCH connects digitally to other areas of the company, collecting and sending data from the production processes. One more element within the digitalization of the working environment.

## SMARTTOUCH®



# CAD/CAM Software

## TCI EXPERT CUT 2D

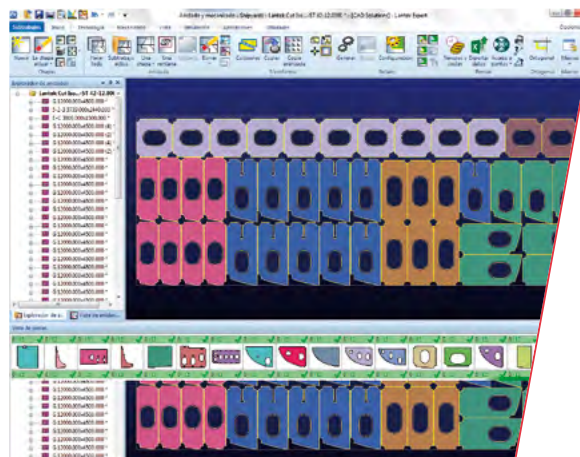
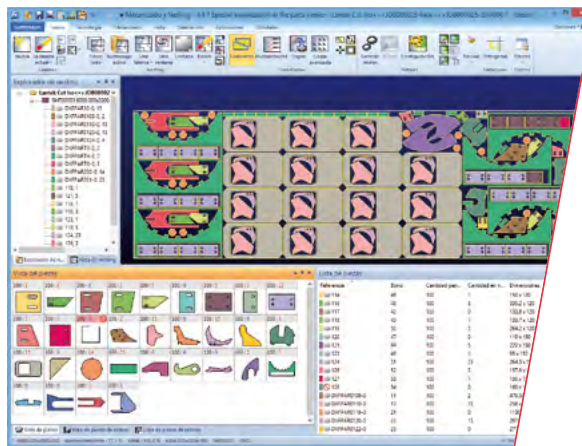


Expert Cut is a CAD / CAM system specially designed for automating the waterjet cutting machine programming. It perfectly combines technology with programming needs and client management.

### Technology

Expert Cut configures and manages the lead-ins for each contour. Common cuts between various pieces can be realized, or limited to only pairs of pieces, with notches and pre-cuts. The software detects errors in both design and machining. It includes automatic lead-ins, manual and automatic cutting, mechanical copying, customization of machines and post-processors. Technology tables for waterjet cutting specified for every machine are available, speed reduction for corners, special penetrations and multi head operation.





## Technical features

Integration of all the options offered by **Expert Cut** in one single program enabling the user to design a piece, import it, create the Nesting (automatic or manual), generate the cutting, generate the CNC, monitor the sheet metal storage, etc. This can all be managed from the same software program without having to change to another.

**Expert Cut** includes:

- Production management and team work
- Shape management, 2D design and an extensive library of catalogue of parametric shapes.
- Sheet metal storage using open databases.
- Calculation of real times and costs.
- Smart Import / Export function

(connecting to the leading CAD systems on the market: DXF, DWG, IGES, etc.).

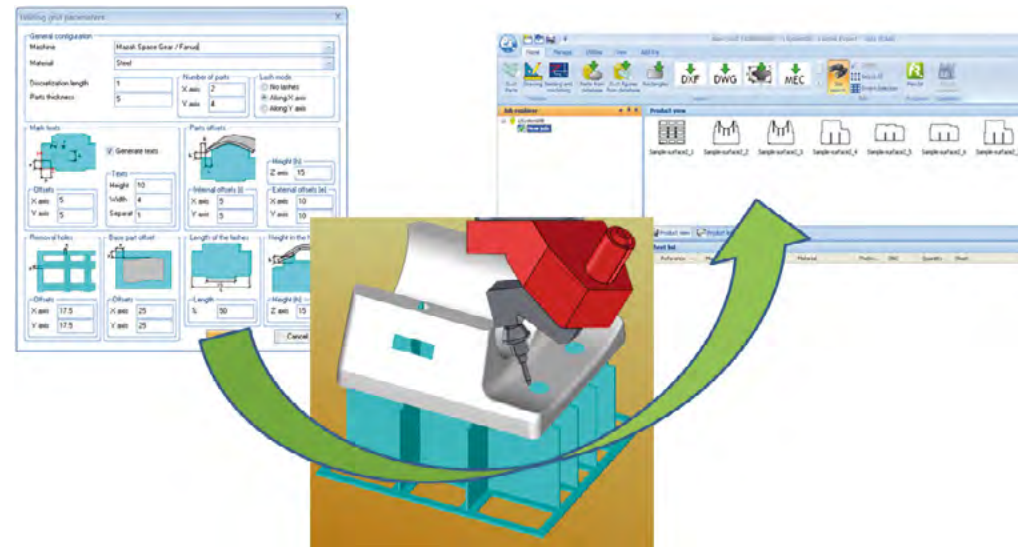
## Nesting

Manual and semi-automatic nesting offers the perfect combination of powerful manual

Nesting functions such as: copying, moving, rotating, etc.

Automatic nesting optimizes the arrangement of parts on the sheet and makes optimal use of the material, including the remnants.

# CAD/CAM Software



## TCI CUTTING FLEX3D5X

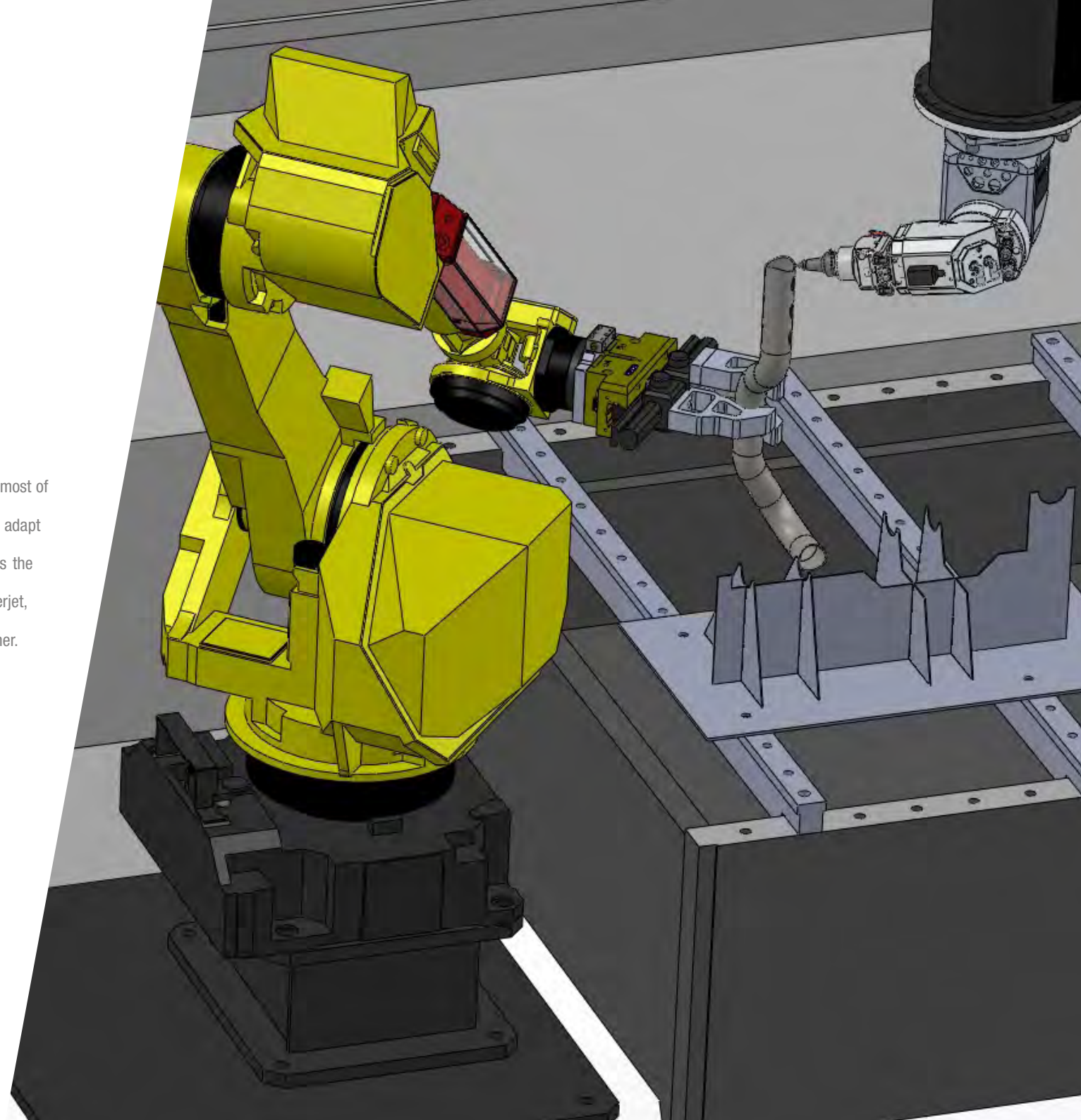
### Introduction

**Flex3D 5X** is a specific application for automating the programming of waterjet cutting machines fitted with 5 axis cutting heads.

It is the ideal accessory to the Expert Cut 2D cutting module. This application is fully compatible with the main 2D design systems used for working with sheet metal. The shapes can be imported in all formats, the relevant technology is then applied and finally the cutting itself is generated. This software has been designed so that the user only has to follow step by step the stages and instructions indicated by the software itself.

# 3D laser Software

The 3D TCI Cutting laser systems are fully compatible with most of the cutting software available on the market, allowing us to adapt to the needs of our clients. The TCI Cutting main purpose is the total customization of our cutting systems, both laser and Waterjet, and with the 3D laser cutting heads we are taking it a step further.



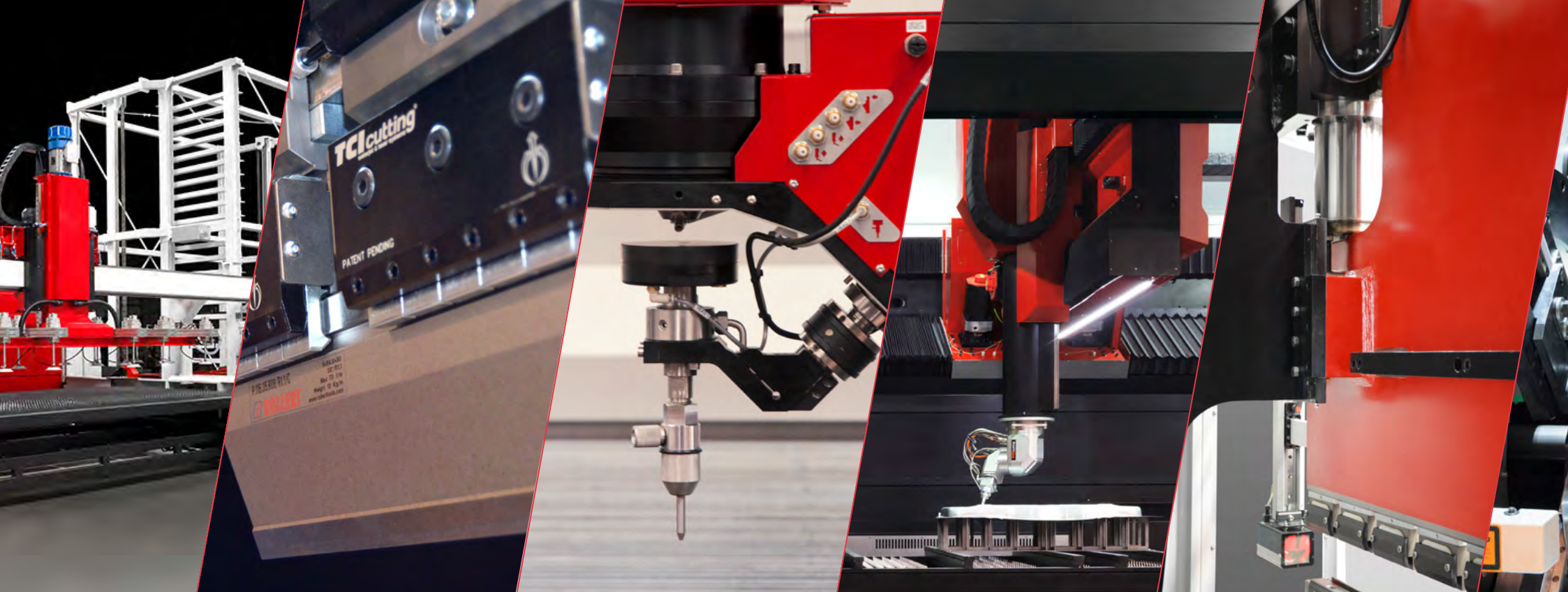
# TCI Cutting Representatives



- Algeria
- Australia
- Austria
- Belgium
- China
- Colombia
- Czech Republic
- Denmark
- Egypt
- USA
- England
- Finland
- France
- Germany
- Holland
- Hungary
- India
- Italy
- Jordan
- Morocco
- Mexico
- Middle East
- Poland
- Portugal
- Romania
- Russia
- South Africa
- Spain
- Sweden
- Switzerland
- Taiwan
- Turkey
- Venezuela

**TCI**cutting®  
waterjet & laser systems





**TCIcutting®**  
waterjet & laser systems

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