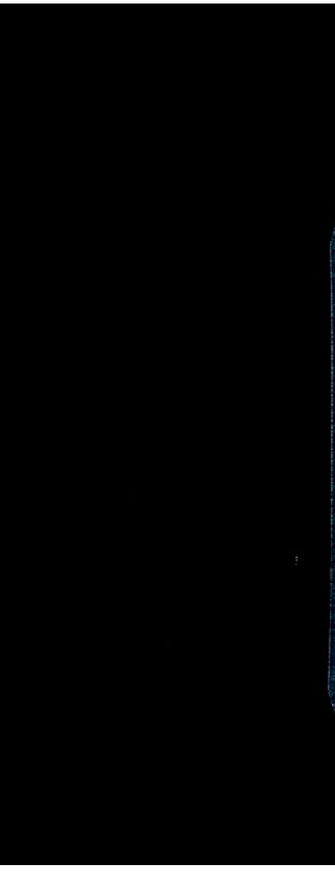
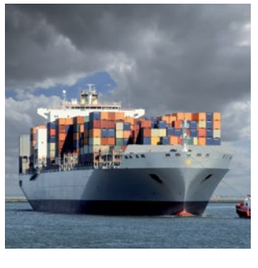
Bystronic

Best choice.

TUBE LASER





Automotive
Railways
Petrochemical
Aerospace
Construction
Commercial vehicles
Agricultural machinery

Limitless applications

The application of processed tubes and profiles is manifold. Whether in the automotive industry, furniture design, architecture, petrochemical industry or commercial vehicle construction. In many industries, the laser-assisted processing of tubes and profiles offers an almost unlimited manufacturing spectrum for components and unique design possibilities.

All our experience is listening to you

Make the right choice for a manufacturing solution that meets your requirements today and in the future. Our specialists will be pleased to provide you with advice about Bystronic's versatile portfolio in the field of tube and profile processing.

No matter whether you have decided to introduce a new production technology or whether you are expanding your existing production range in the field of tube and profile processing with an additional machine, we will develop the optimum solution together with you. Backed by our expertise in metalworking and laser cutting, we are your reliable technology and service partner.

Bystronic
Bystronic is a leading global provider of high-quality solutions for the sheet metal processing business. The focus lies on the automation of the complete material and data flow of the cutting and bending process chain. Bystronic's portfolio includes laser cutting systems, press brakes, and associated automation and software solutions. Comprehensive services round off the portfolio.

The full diversity of tube and profile processing

2D and 3D processing:
The ability to choose between 2D and 3D laser cutting technology opens up the possibility of individually customized and precise cutting of parts in a very wide variety: tubes with round, square, and rectangular shapes as well as profiles with diverse open cross-sections (for example H, L, T, and U cross-sections). In addition to straight cutting edges, the 3D technology also enables bevel cuts up to 45 degrees. This versatility eliminates the need for costly milling, drilling, punching, or sawing processes.

Solutions

With diameters ranging from 12 to 610 millimeters and pipe and profile lengths up to 14 meters, our system solutions offer the largest available selection for the flexible production of small and large series.

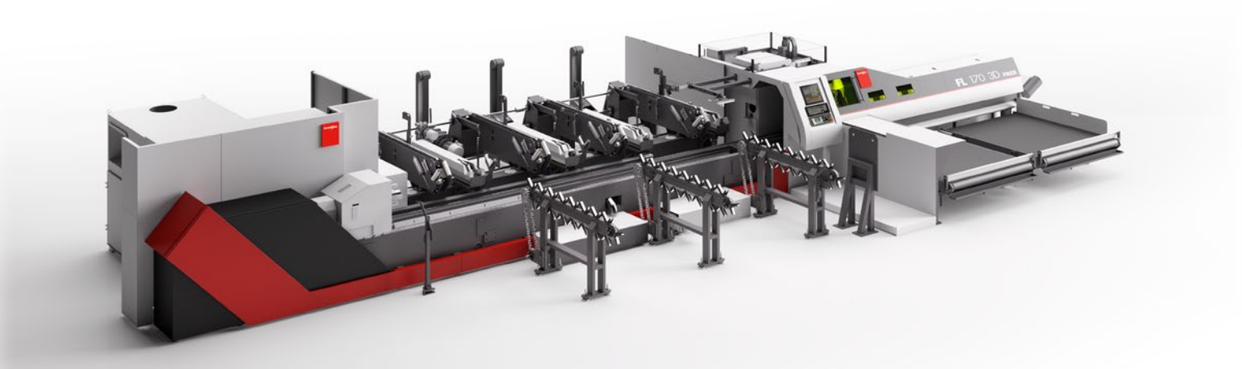
ByTube 130

The ultimate laser technology for tube processing

Customer benefits

- More profit per part: Low operating costs and low maintenance requirements thanks to the latest Bystronic fiber laser technology
- Wide range of applications for all types of metal in diameters from 10 to 130 millimeters and workpiece lengths up to 8.5 meters
- Smart material handling: Fast loading and unloading ensures high productivity and profit
- High loading capacity (17 kg/m) combined with the market's highest dynamics thanks to the innovative redundant axis (Quick Cut)
- Reduced footprint and customized configuration to adapt to the customer's production environment and optimize the material flow
- Easy to operate and transparent process control thanks to the intuitive ByVision Tube user interface and the fully-automatic workflow management for all applications within the range

	By Tube 130
Dimensions of tube and profile cross-sections	∅ 10 – 130 mm □ 10 × 10 – 130 × 130 mm
Max. tube weight	17 kg/m
Available loading lengths	6.5 – 8.5 m
Available unloading lengths	2 – 4 – 6 m
Cross-sections	○ □ ▯
No. of chucks	2
No. of controlled axes	6
Max. linear chuck speed	200 m/min
Cutting head	2D

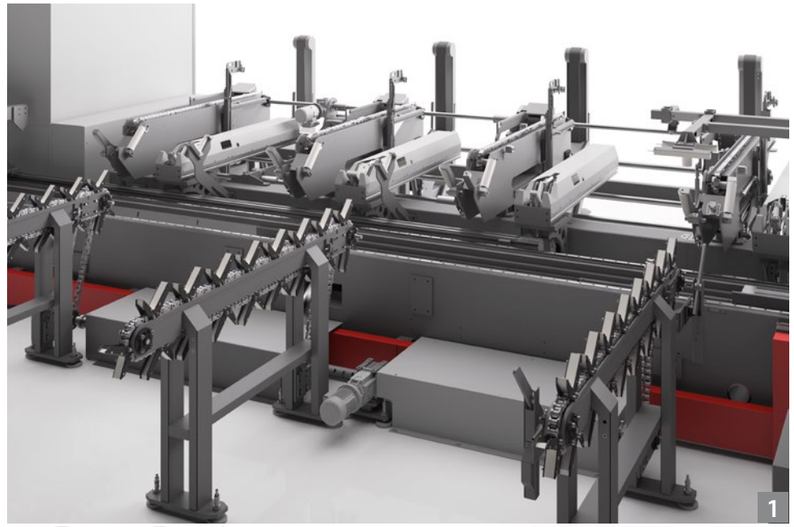


M2 model series

The fiber laser for fast and versatile applications

Customer benefits

- Concentrated technology: The cutting system combines the unique benefits of fiber laser technology with the versatility of 3D cutting
- Wide range of applications for the cutting of steel, stainless steel, aluminum, and non-ferrous metals in diameters from 12 to 168 millimeters and workpiece lengths up to 8.5 meters and possibility to process open profiles
- More profit per part: Fast cutting processes combined with comparatively low operating costs and low maintenance requirements
- Bevels and angles: In addition to straight cutting edges, the 3D technology also enables bevel cuts of up to 45 degrees. This versatility eliminates the need for costly milling, drilling, punching, or sawing processes

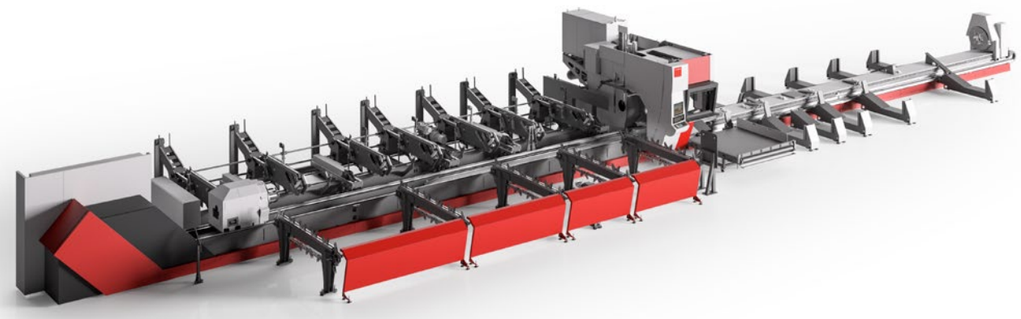


1 Automatic loading system

2 Cutting area

3 Automatic unloading system

	FL 170
Dimensions of tube and profile cross-sections	∅ 12 – 168 mm □ 15 × 15 – 140 × 140 mm
Max. tube weight	25 kg/m
Available loading lengths	6.5 – 8.5 m
Available unloading lengths	2 – 6 m
Cross-sections	○ □ ▯ H ⌴ ∟
No. of chucks	2
No. of controlled axes	21
Max. linear chuck speed	150 m/min
Cutting head	2D – 3D

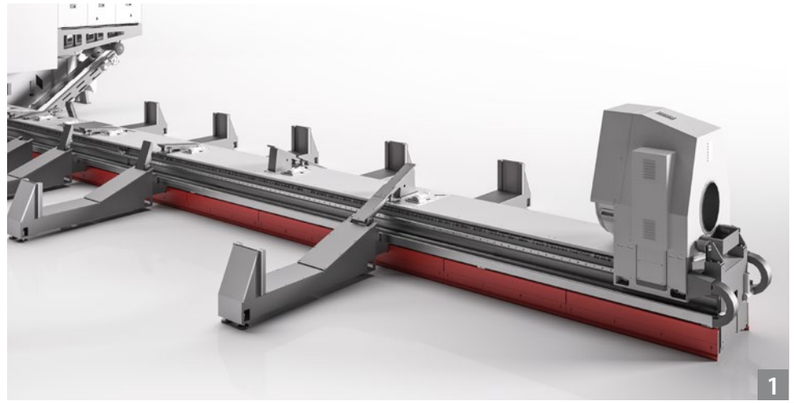


M3 model series

The tube laser for highest demands on productivity and flexibility

Customer benefits

- Outstanding cutting quality right up to high material thicknesses: The CO_2 laser technology achieves excellent cutting edges with minimal scoring. In addition to straight cutting edges, the 3D cutting head also enables bevel cuts of up to 45 degrees. This versatility eliminates the need for costly milling, drilling, punching, or sawing processes
- Wide spectrum of applications: Users cut steel, stainless steel and aluminum in diameters between 20 and 305 millimeters and workpiece lengths up to 12.5 meters
- Flexible loading from bundle loading or from chain loading system for open profiles. Subsequently, the precise clamping of the tubes and profiles ensures high-precision processing
- For longer workpieces, the unloading system's controllable axes enable any type of tube or profile to be clamped during processing

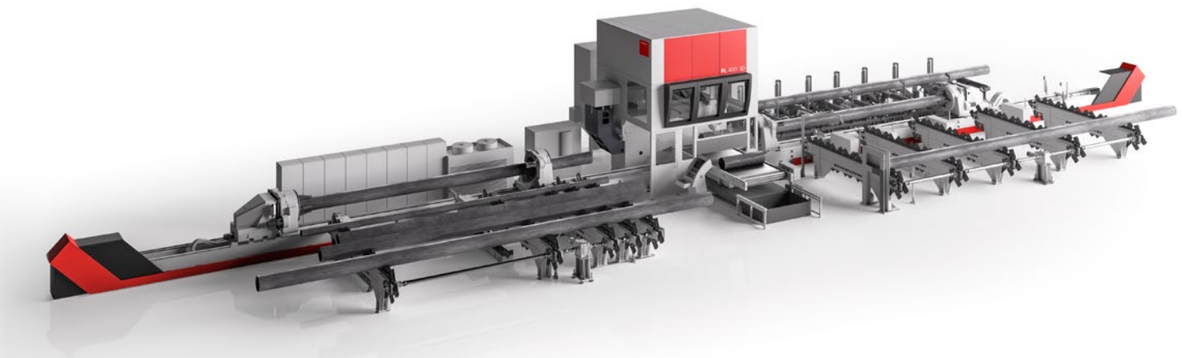


1 Automatic unloading system with third chuck

2 Automatic loading system

3 Cutting unit

	FL 300
Dimensions of tube and profile cross-sections	∅ 20 – 305 mm □ 254 × 254 mm
Max. tube weight	60 kg/m
Available loading lengths	6.5 – 12.5 m
Available unloading lengths	2 – 12 m
Cross-sections	○ □ ▯ H ⌴ L
Number of chucks	2 – 3
No. of controlled axes	29
Max. linear chuck speed	130 m/min
Cutting head	2D – 3D



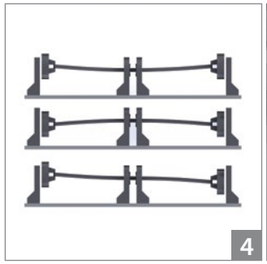
M4 model series

Maximum flexibility for tubes and profiles in the XXL format

Customer benefits

- No limits in terms of diameter and format: The M4 series comprises processing systems for tubes and profiles with an outer diameter of up to 610 millimeters and a maximum length of 14 meters
- Outstanding cutting quality right up to high material thicknesses: The CO_2 laser technology achieves excellent cutting edges with minimal scoring. This means that the cut parts can be processed further without reworking
- Versatile 3D technology: The 3D cutting head enables straight cuts as well as bevel cuts of up to 45 degrees. This versatility eliminates the need for costly milling, drilling, punching, or sawing processes
- High level of dynamics: The heart of the M4 series consists of the three-dimensional "Sphera" system. This enables processing in any position with a high level of dynamics
- Shorter set-up times: Processing different diameters and cross-sections without having to change tools thanks to four self-centering chucks that ensure the precise movement of the workpiece along the processing axis
- Highest precision in spite of the irregularities of large workpieces: During processing, the FMS floating mounting system of the four self-centering chucks compensates for angle deviations in workpieces

1



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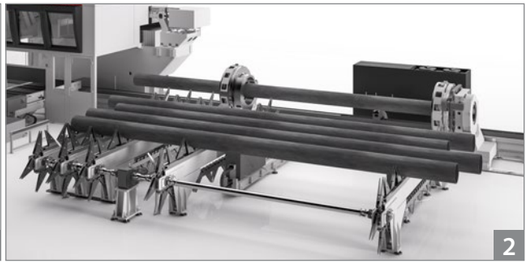

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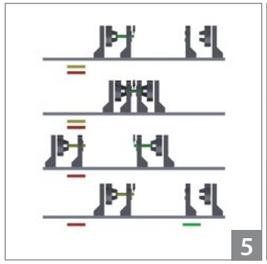

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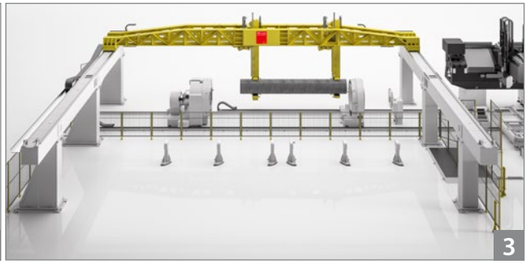


3

1 Three-dimensional "Sphera" system for high dynamics

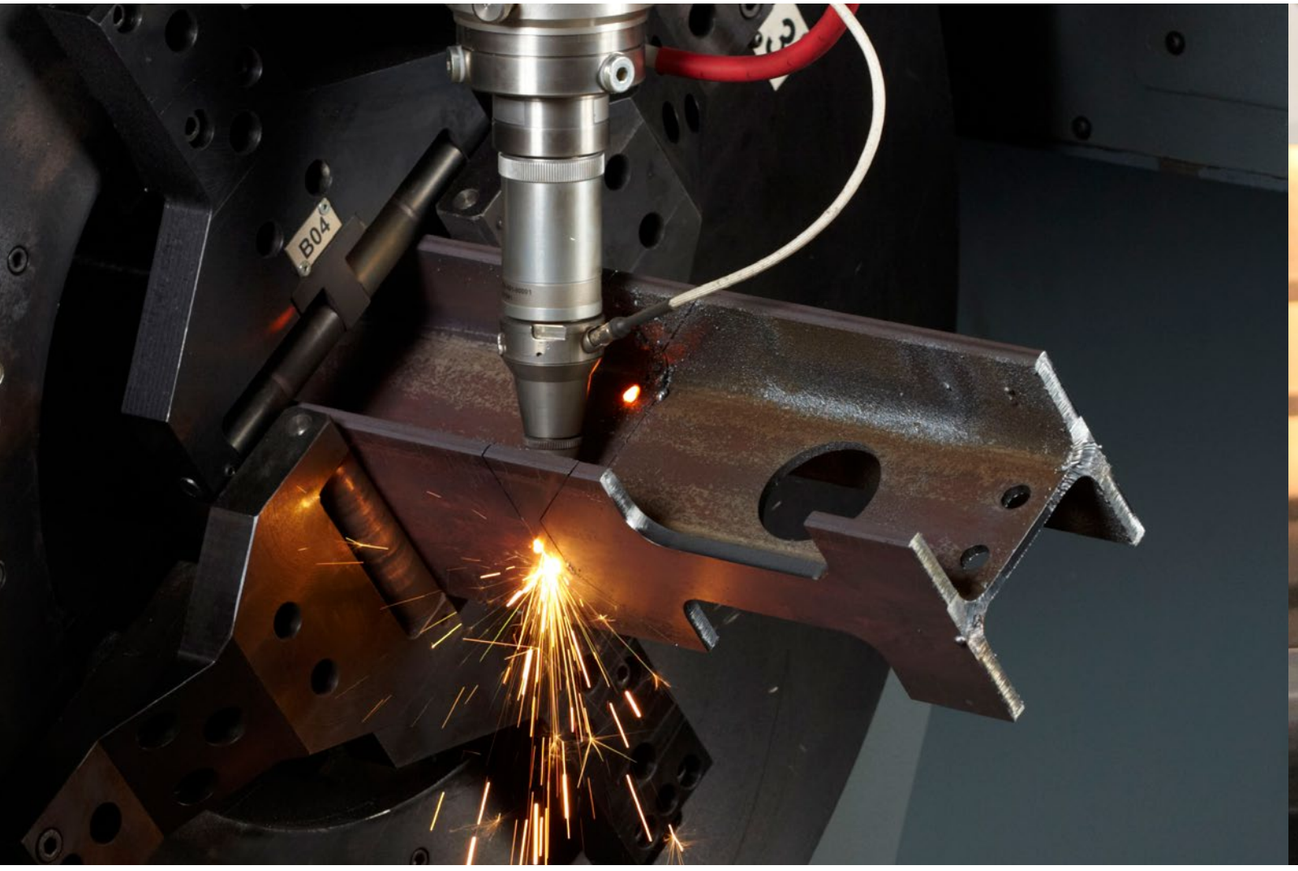
2 Automatic chain unloading system

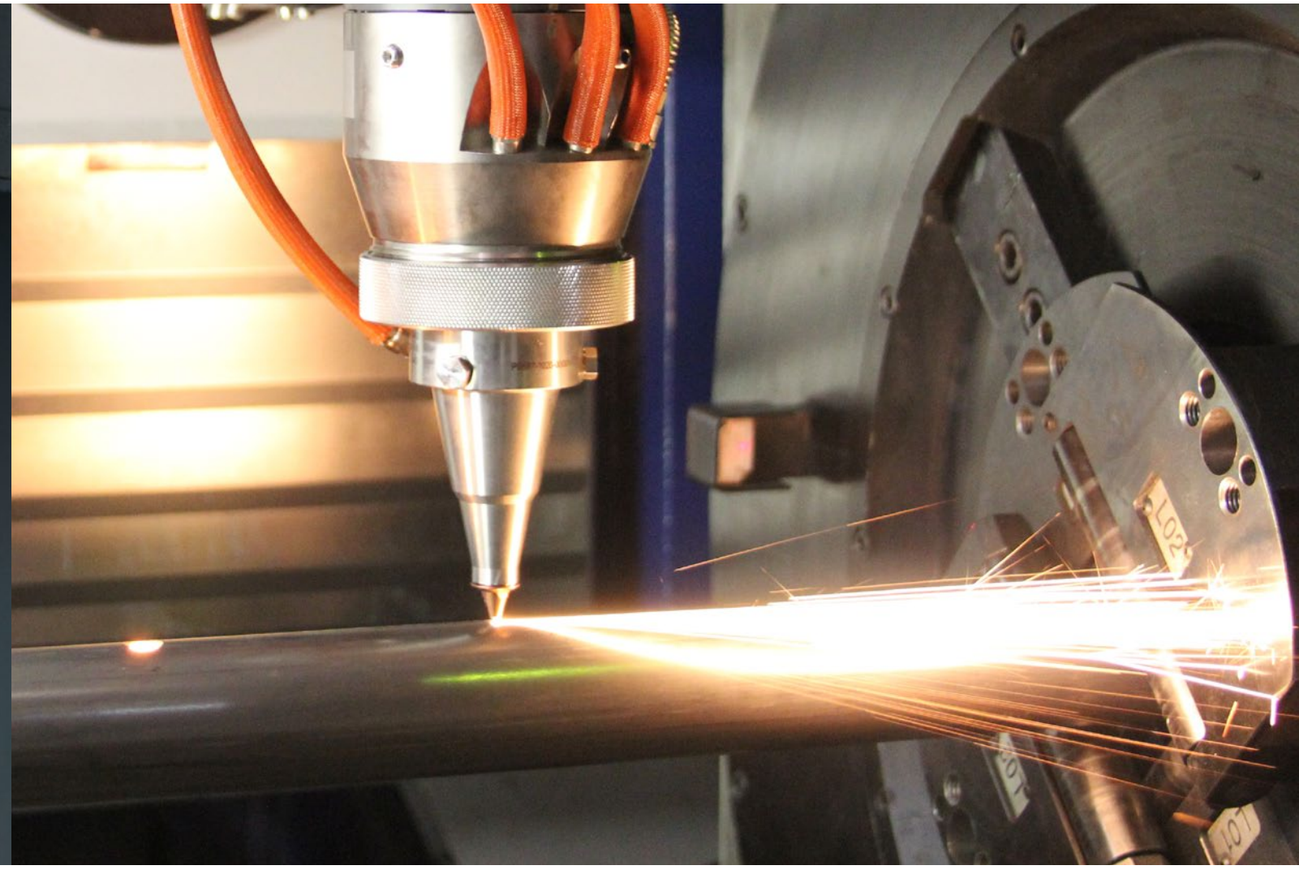
3 Generous loading and unloading portals

4 4 movable chucks with floating system (FMS®).

5 Optimization of the loading and unloading ensures high level of productivity.

	FL 400	FL 600
Dimensions of tube and profile	∅ 40 – 406 mm	∅ 89 – 610 mm
cross-sections	□ 300 × 300 mm max.	□ 400 × 400 mm max.
Max. tube weight	140 kg/m	290 kg/m
Available loading lengths	up to 14 m	up to 14 m
Available unloading lengths	up to 14 m	up to 14 m
Cross-sections	○ □ ▯ H ⌴ L	○ □ ▯ H ⌴ L
Number of chucks	4	4
No. of controlled axes	30	33
Strokes of gantry system (X/Y/Z)	2000/1200/800 mm	2000/1500/980 mm
Max. linear chuck speed	70 m/min	60 m/min
Cutting head	2D – 3D	2D – 3D





Machine type	Fiber laser		CO_2 laser	
	Laser source			
	Fiber 2000	Fiber 3000	Laser 3000	Laser 4000
By Tube 130	■	■		
FL 170	■	■		
FL 300			■	■
FL 400				■
FL 600				■

CO_2 laser and fiber laser technology

The right cutting technology for every requirement. Depending on the materials that are to be processed and the desired cutting quality and level of productivity, users have the choice between CO_2 laser cutting systems and fiber laser cutting systems. Fiber lasers achieve high cutting speeds in thin material thicknesses. Additionally they boast low power consumption while requiring little maintenance. The special properties of this laser cutting technology enable applications in steel, stainless steel, aluminum, and non-ferrous metals, such as copper and brass.

CO_2 lasers are characterized by their high cutting quality. Their primary area of application lies in the medium to high range of material thicknesses. The cutting edges achieved with the laser beam excel through burr-free cutting and low scoring. This means that the cut parts can be processed further without reworking.

TTMaster

TTMaster is the CAD/CAM solution for the offline programming of tube cutting systems. The software guides users through the entire programming process, from designing parts right through to the creation of the CNC programs.

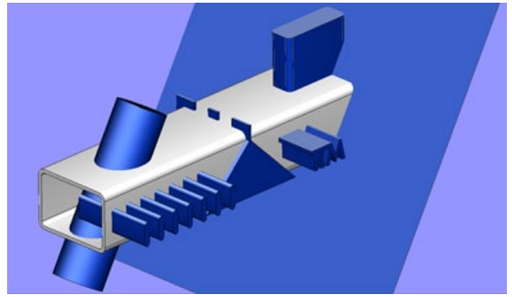
The software consists of three modules:

- 3D-Designer
- Technology creation
- Production management

The software guides the operator from the 3D modelling of the workpiece to the planning of the cutting paths and right through to the final process file. TTMaster simplifies production management by optimally nesting the parts that are to be cut on the raw material, thus reducing material consumption and making the management of the entire production process more efficient.

3D-Designer

The 3D design environment makes it incredibly easy to design tubes and open profiles. Holes and other features can be created using parametrical drawings and the penetration of solids. TTMaster provides a library of customizable sections (round tubes, rectangular tubes, etc.) and the most commonly used tube and open profile sections.

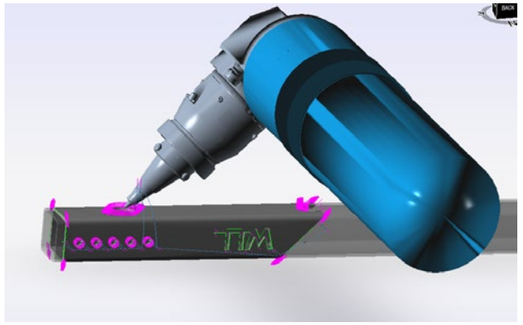


Overview of the most important features:

- 3D modelling of tubes and open profiles
- Definition of drilling holes and processing of all types of shapes by extruding sections from dxf files
- Import of the most common 3D files, such as step, iges, or ifc

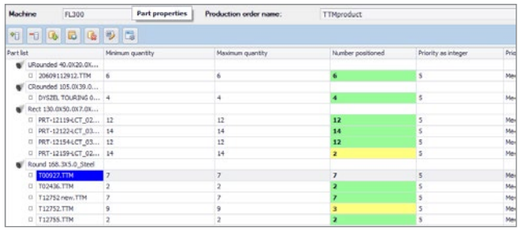
Technology creation

Once the workpiece has been designed, the software automatically creates the suitable cutting process by optimizing the processing sequence of the features, defining the correct positions of piercings and lead-ins, the technological parameters, and the ideal cutting parameters for each feature, and the tilt of the cutting head for bevel cuts.



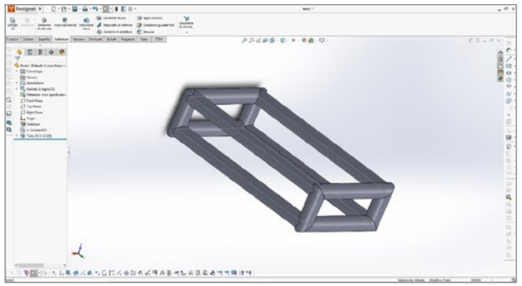
Production management

Once the technologies for the individual parts have been defined, TTMaster enables comprehensive production management. In this phase, the nesting module ensures the optimized positioning of the workpieces on the raw material. The most important feature of this application is the ERP/MES interface for Industry 4.0.



TTDesigner

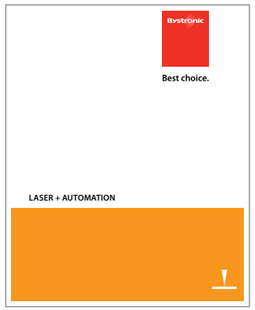
With TTDesigner, an optionally available extended CAD component based on Solidworks, TTMaster offers an even more comprehensive design environment in addition to the CAD tool included in the basic software package. This additional component allows the user to utilize Solidworks to create and manage part geometries.

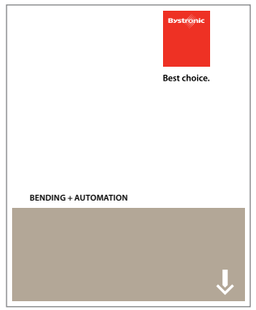


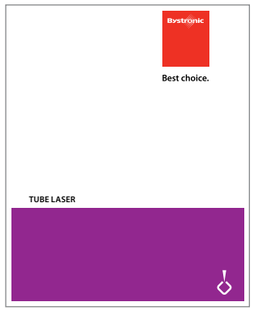
Overview of the most important features:

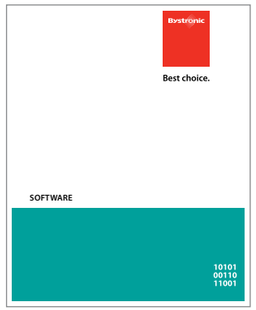
- Import and export of all the most commonly used file formats, extensions, and property files
- Management and modification of 3D solids using advanced functionalities, such as adding or removing material, adapting angles, creating surface lines, and more
- Draw, modify and complete assemblies and provide may other functions like the coupling of the structural parts

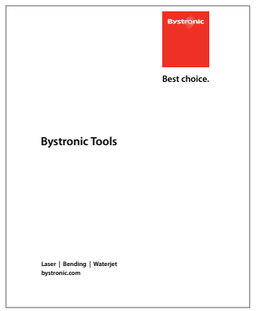
Bystronic Collections











Tool catalog

Not all products listed in this brochure are available in all countries.

This brochure may show parts that are not standard equipment, but are available as options. For the better visibility of machine details, some safety covers may have been opened or removed for these pictures. The right to makes changes to dimensions, construction, and equipment is reserved. For technical data, see the separate data sheets.

ISO-9001-certified

Bystronic **Media Center**
- Photographs
- Brochure
- Technical Data Sheets
- Videos

Bystronic **Videos** on Youtube

Best choice.

TUBE LASER

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