## /// OPTIONAL: AUTOMATIC CARTESIAN UNLOADING SYSTEM

The "automatic unloading system with cartesian" consists of a structure made with extruded aluminum profiles that ensure rigidity and lightness in order to guarantee low inertia and absorption qualities during the movement of the axes.
Thanks to this modular and versatile structure, it is possible to effectively solve the most varied types of gripping of the piece, allowing you to change the center distance of the suction cups with respect to the sheet metal at will and creating ideal gripping situations.
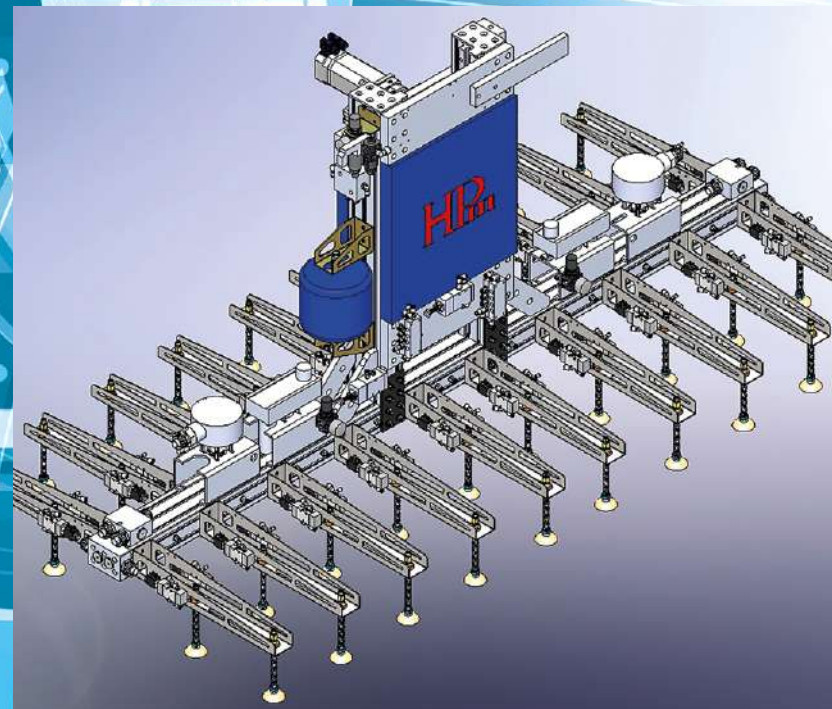
The gripper of the "automatic unloading system" is made up of a sturdy central beam to which pliers holder arms are fixed orthogonally, including cushioned suction cups with solenoid valves.
The function of each individual suction cup is managed by numerical control in such a way as to be able to carry out the lifting and depositing of sheets in a completely automatic way on a special bench or other support surface, whatever the shape of the template to be picked up.

/// NUMERICAL CONTROL

HARDWARE FEATURES
:: Intel® core™ i5 processor
:: 120 GB SSD or higher
:: 4 GB of RAM or higher
:: 1 RS232 serial output
:: 2 USB3 outputs + 2 USB2 ports
:: 21.5 " LED monitor with 1920x1080 resolution and vandal-proof touchscreen panel with pcap technology
:: 2 Ethernet 10/100 TCP / IP network card
:: FlorenZ real time operating system

TECHNICAL FEATURES
:: Special functions for laser cutting
:: Part-program type g-code
:: Up to 10 simultaneous coordinated axes programmable in a block
:: Reading speed up to 11000 blocks / sec (G1 / G2 / G3 blocks from internal memory)
:: Execution of large part-programs in DNC from hard disk
:: Dynamic look-ahead, over 500 blocks
:: Sophisticated jerk control to limit mechanical stress
:: Algorithms for high speed
:: Canned cycles and machining macros
:: Management of bi-rotary heads and roto-tilting tables (RTCP) for vanes, impellers, molds
:: Gantry axes management

:: Multiprocess: max 6 simultaneous and independent processes
:: Control up to 32 digital and 16 analog axes
:: FlorenZ operating system (D.electron distribution based on Linux)
:: Applications D.electron for operator interface and commissioning
:: Integrated plc with bi-directional real-time access to CNC data
:: PLC fast sections up to 2 mS, synchronized with the part-program
:: Editor, debugger, digital oscilloscope for integrated PLC
:: Secure data storage function (black box)
:: Easy digital axis calibration
:: Connection to lan via ethernet TCP / IP
:: Teleservice via the internet

4.0

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/// LASER PLANT WITH COIL ///
/// LOADING AND TREADMILL ///

HPm®
HIGH PERFORMANCE MACHINERY
FIBER MAX LINE

MADE IN ITALY PRODUCT - Entirely produced in our workshops.

Motorized reel

The "Fiber Max Line" is fed by one or more sheet metal coils each inserted into its own manual reel. Alternatively, the MOTORIZED REEL can be supplied which, through the operating logic of the system and a special sensor, automatically feeds the "Fiber Max Line", acting as a numerical control. Starting from the coil, the metal sheet, is inserted into the individual input shelves of the inserter: it is a module that allows the insertion of up to 4 types of sheet metal with different widths and thicknesses.
Then the sheet reaches the leveling machine, which has the function of "leveling", in order to prepare it for subsequent processing.

HPm® has equipped the laser head with a certified protective housing. this casing, with special systems patented by HPm®, prevents the laser beam from escaping with a minimal footprint compared to current products on the market.

The laser head unit constitutes the tool for carrying out the machining.
It is fixed to the carriage which hadles the movement along the y axis through a pinion - rack coupling driven by a brushless motor.

The vertical movement of the laser head is also entrusted to a brushless motor that drives a ball screw. This movement is linked to the motion of four recirculating ball shoes that slide on special guides.

/// TECHNICAL FEATURES

Reels up to 5 tons
::: Automatic 4-way inserter
::: 7-roller leveling machine ø 100
::: Treadmill for sheet metal loading and unloading
::: Laser beam coverage through patented and certified protective casing
::: Possibility of automatic unloading by means of a cartesian suitably designed for series works (optional)
::: Possibility of processing single sheet metal, as well as from coil
::: Internal camera with monitor vision
::: Numerical control with 21 '' touch screen monitor
::: Possibility of integration of laser source from 2 to 4 kw
::: Integration of software of any level with cnc preparation
::: Laser-fiber structure mod. "Fiber Max Line":
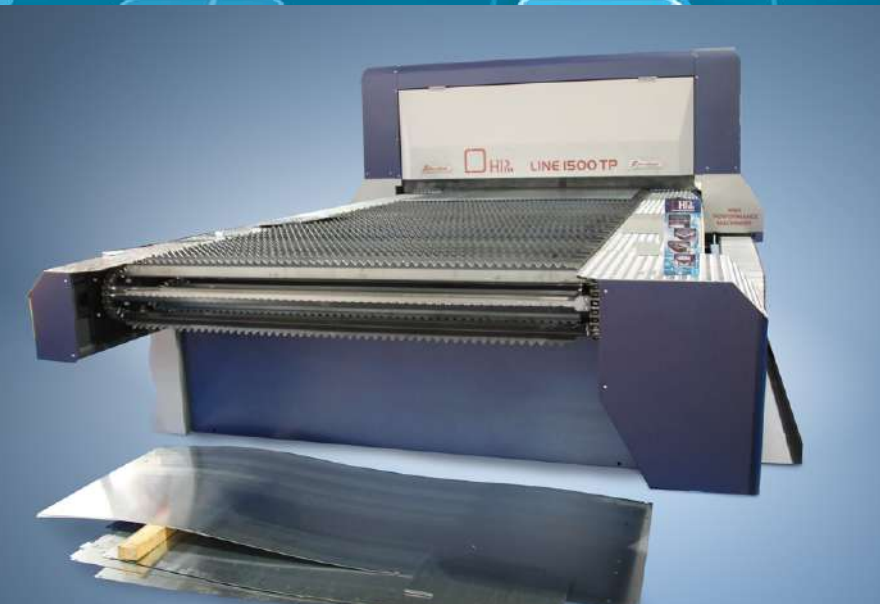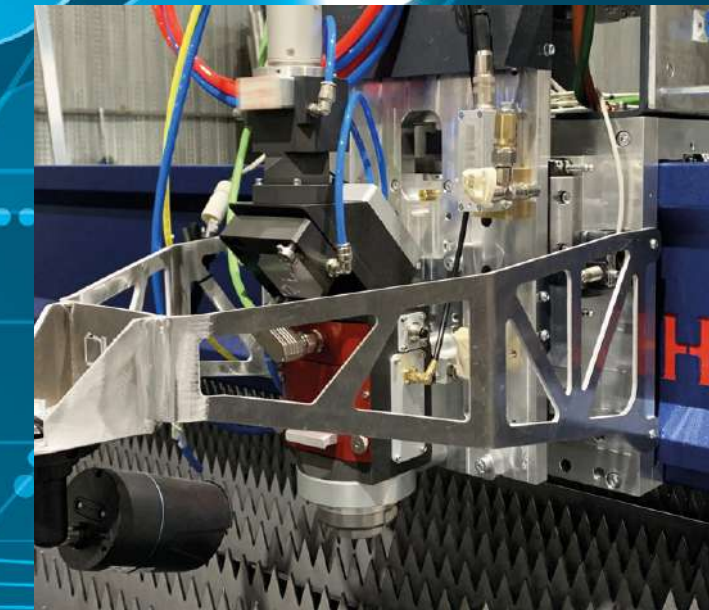3000x1500 - 4000x1500 - 4000x2000 - 6000x2000

Manual reel

The support and sliding surface of the sheet, called "TAPIS ROULANT", is synchronized with the advancement of the leveling machine: has a leading part of simple scrolling to then, bring the sheet to the cutting area where the work process will begin.

In order to observe the work performed in full safety for the operator, the inside of the casing is illuminated and equipped with a special surveillance camera connected to an external monitor from which it is possible to check the correct operation of the laser cutting machine.

/// DRAWING SOFTWARE FOR WORKING SETTING:

::: 2D drawing of the shapes
::: Detection of double identities and open paths
::: Import files in dxf / dwg format
::: CAM for piece allocation (nesting)
::: Management of orders and batch production
::: Integration between automatic and manual nesting
::: Automatic management of cutting parameters
::: Options that reduce the number of triggers (entrances and exits of cutting paths, common cuts, bridges)
::: Recovery of scraps and internal cavities
::: Production data statistics (costs, times and surfaces)

::: Entry and exit of the cuts, differentiated for each thickness
::: Direct passage of the shapes between drawing and nesting
::: Deletion / redoing of multi-level changes
::: Graphic addition of shape on the plane by dragging mode
::: Parametric parts library for aspiration, conditioning, insulation (optional)
::: Compatibility with the most popular cutting programs (iso data output, essi etc) (optional)
::: Automatic or manual trimming of the sheets
::: The machinery is 4.0 and is designed to meet the interconnection requirements required by "industry 4.0"

At the end of the cutting area stroke, the treadmill continues to drag the cut sheet metal pieces and scraps, taking them out of the useful laser cutting area, in order to allow the operator to unload them.

The console has a 21 '' touch screen monitor from which it is possible to issue all the main commands such as the programming and execution of both the cutting line and the laser system thanks to the latest generation software.