

TRF

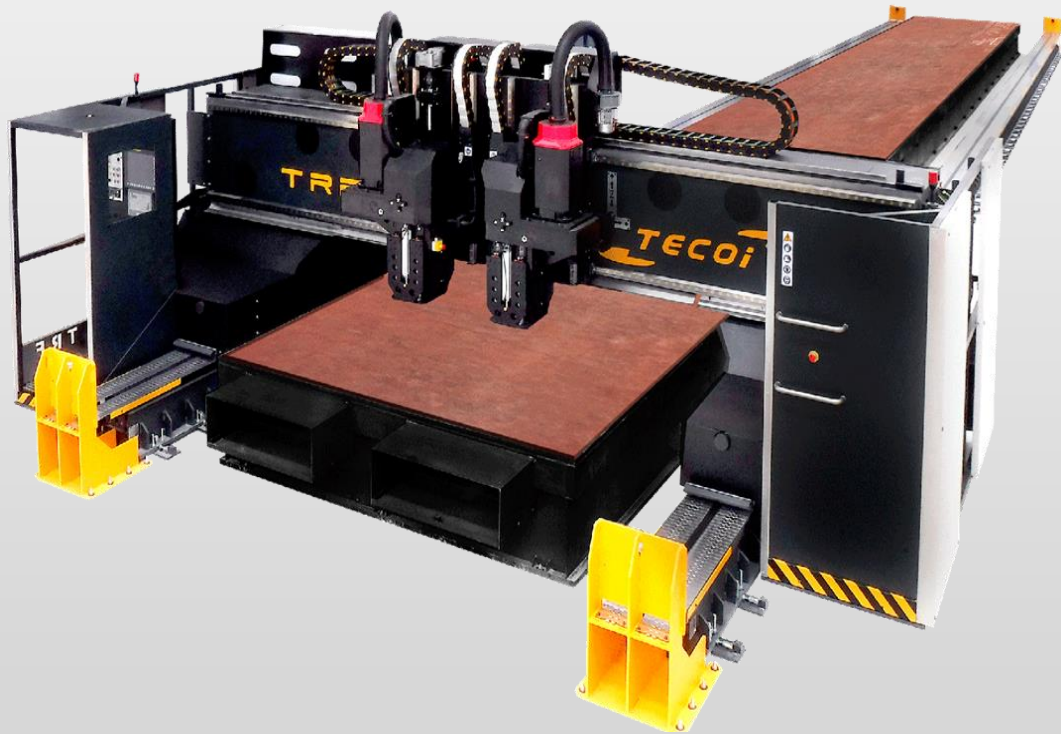
Edge Milling for Welding

General Description



- i. General Description
- ii. Technical Data
- iii. Main Components
- iv. CBM® Technology
- v. Additional information
- vi. References

General Description



Specifically developed for edge milling in pre-welding processes, TECOI's TRF stands out for its heavy-duty machining capabilities. Featuring a robust and efficient design, this exclusive TECOI model allows high-speed production of quality bevels even in large thicknesses.



petrochemical



naval

application fields

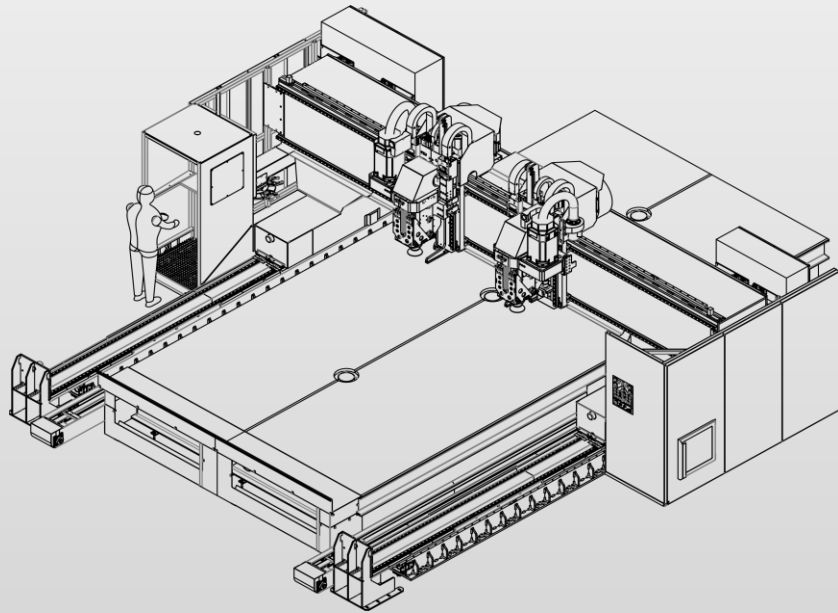


wind power



tanks and vessels

Technical Data



Operating Machining Area	Up to 45.000 x 4.200 mm (148 x 14 ft)
Vertical Head Route	Up to 700 mm (27.5")
Positioning Accuracy	± 0,1 mm. (± 4 mil.)
Max. Operating Thickness	200 mm (7.9")
Min. Operating Thickness	4 mm (1/6")
Acceleration	1.000 mm/seg ² (39"/seg ²)
Spindle Motor Power	Servomotor FANUC™ 30-50-75-100 kW
Revolutions	Maximum speed 2000-4000-6000 rpm

main components



Gantry section



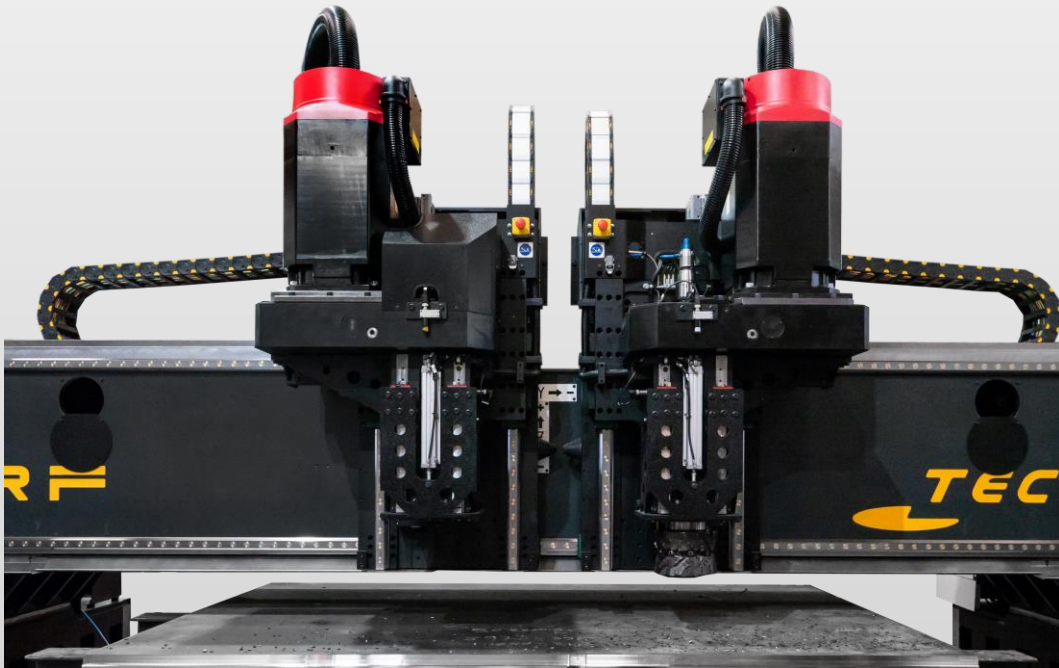
The self-supporting TRF gantry features a rigid electro-welded structure that moves horizontally on a guide system along the X-axis. Able to incorporate one or two machining heads, it is based on two feet at both its ends that house the motor system, and has been specifically strengthened to neutralize any vibration during the milling process.

Double-channel structure



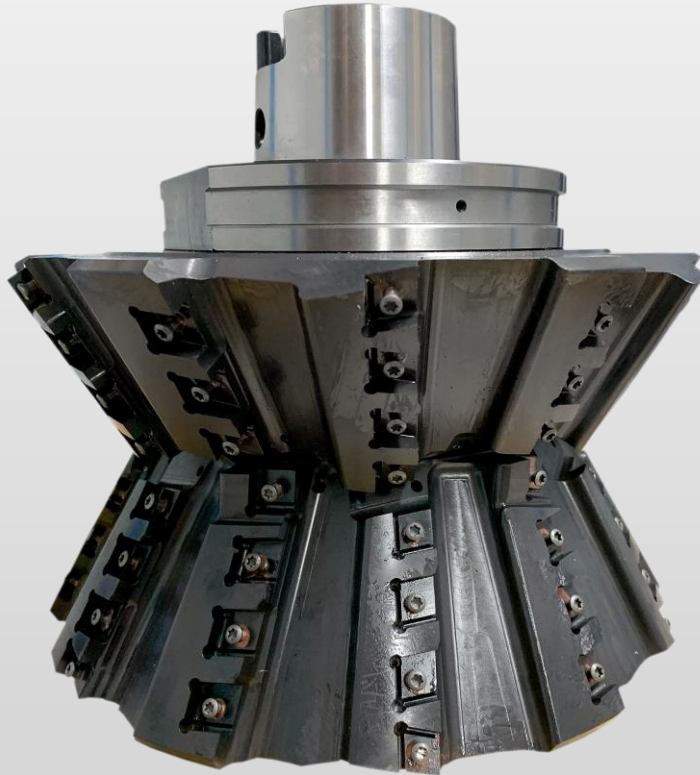
The TRF performs an innovative double-channel structure that allows the incorporation of milling heads at both ends of the gantry to simultaneously process the two sides of the plate. This design has been precisely conceived so that these simultaneous operations do not result in any loss of quality or efficiency in either of the two bevels.

Machining heads



Equipped with high power motors able to generate the optimum amount of revolutions required for a fast, clean milling, these machining heads also incorporate state-of-the-art positioning technologies that allow the distance between them in the Y-axis to be modified in real time according to the width of the processed plate.

Milling tools



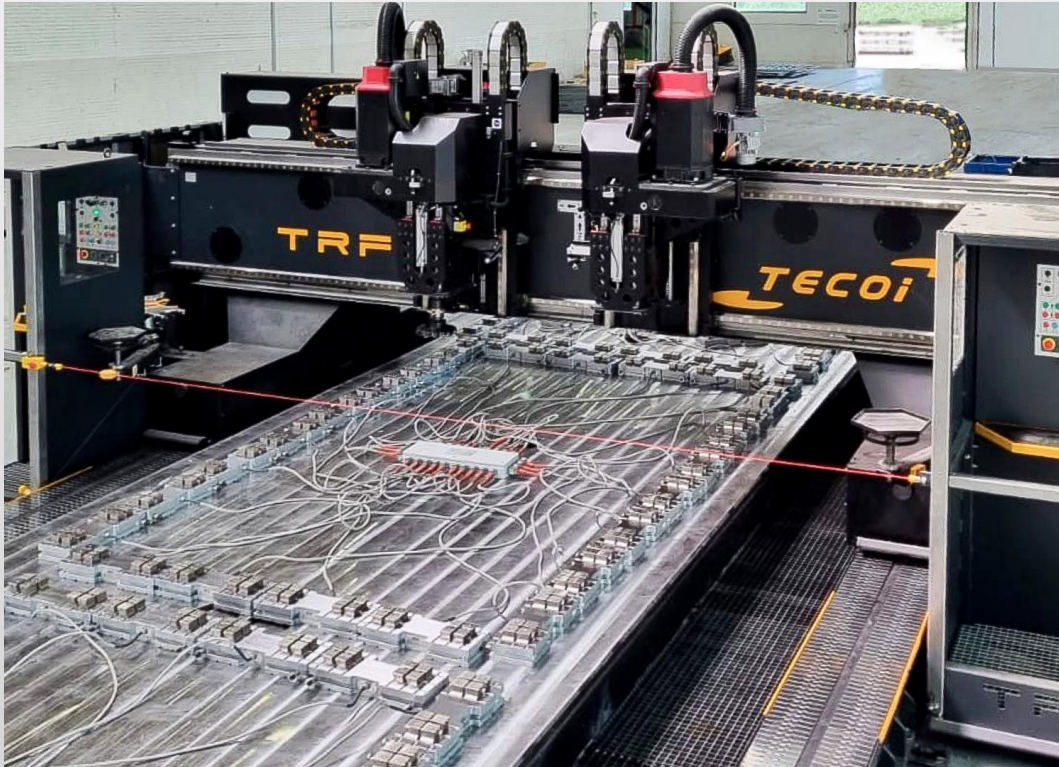
Exclusively manufactured for TECOI, these tools feature several different angles & shapes to make I, K, V, X and J bevels in one single pass. TECOI also offers the possibility of custom their design, tailoring it to each project requirements. The flexibility in the design of TRF tools also makes it suitable for narrow gap welding preparation.

Automatic tool magazine



To carry out jobs that require to produce different shapes and bevels, TRF machines can incorporate an automatic tool magazine per machining head at the ends of the gantry. Able to automatically perform quick and autonomous changes between tools, these magazines can also feature up to 5 different positions. A manual version is available as well.

Magnet bench



Instead of the reinforced cutting tables equipped in TECOI thermal cutting machines, TRF features a high-resistance magnetic bench. This element consists of a magnet grouping system of 16 double units for each 12 m (39 ft.) of the plate to be processed that ensures its maximum stability and avoids vibrations during the milling process.

Numerical controls and control cabins



TRF machines are equipped with one or two control cabins, depending on the number of heads they feature. These cabins host the numerical control, specifically designed by worldwide leading manufacturer FANUC for this range of machines. Similar to TECOI cutting machines, these CNCs ensure a fast execution of all processing commands.

Numerical controls



Capacitive touchscreen with integrated protector.

Screen size 15"/19".

Intel Celeron(R) Dual-Core CPU T3100 @ 1.9 GHz RAM 2GB.

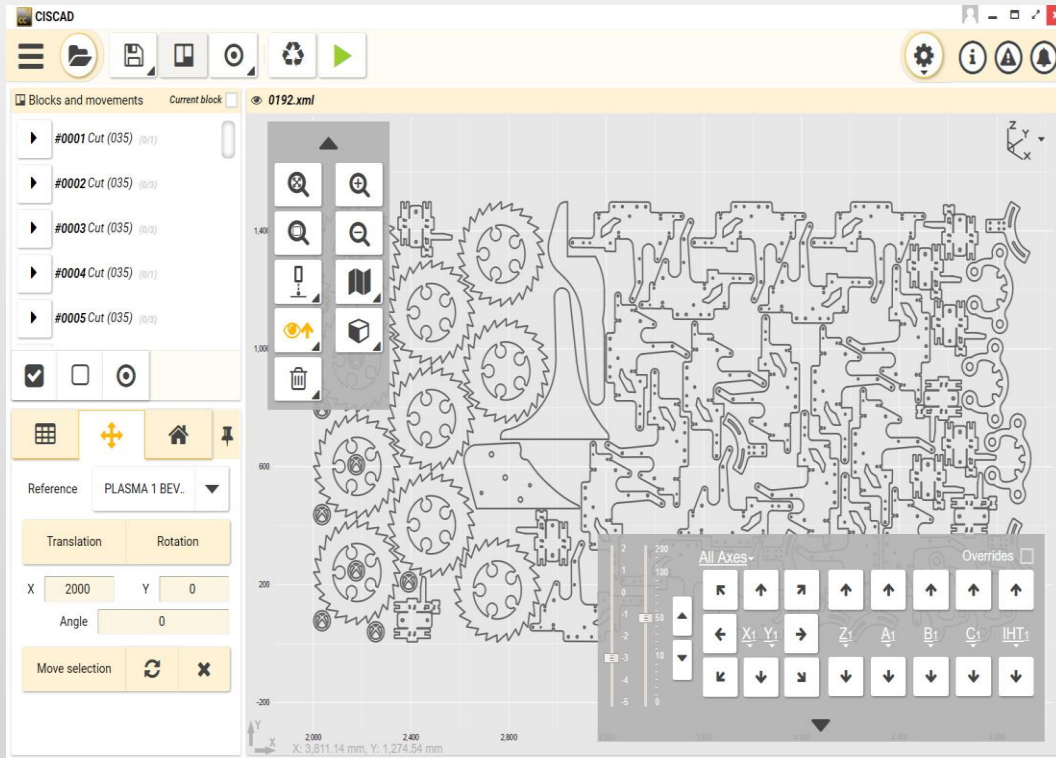
Hard disk capacity 240 GB.

High power AC Brushless servomotors.

Measurement system via absolute encoder.

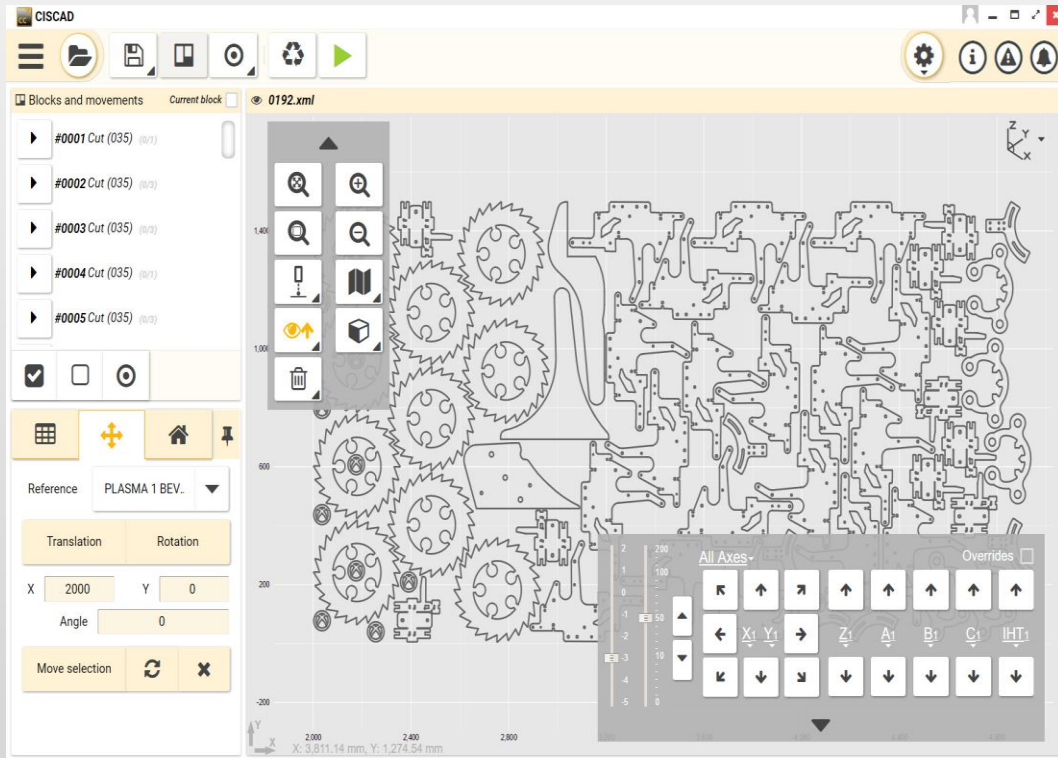
Ability to connect a maximum of 20 Brushless motors.

CISCAD NEO



CISCAD NEO is a Human Machine Interface fully developed by TECOI that stands out for providing complete control of the production and real-time monitoring capabilities. Although TECOI models are open to further configurations, CISCAD NEO is their standard operating system and the one that best optimizes their performance.

CISCAD NEO

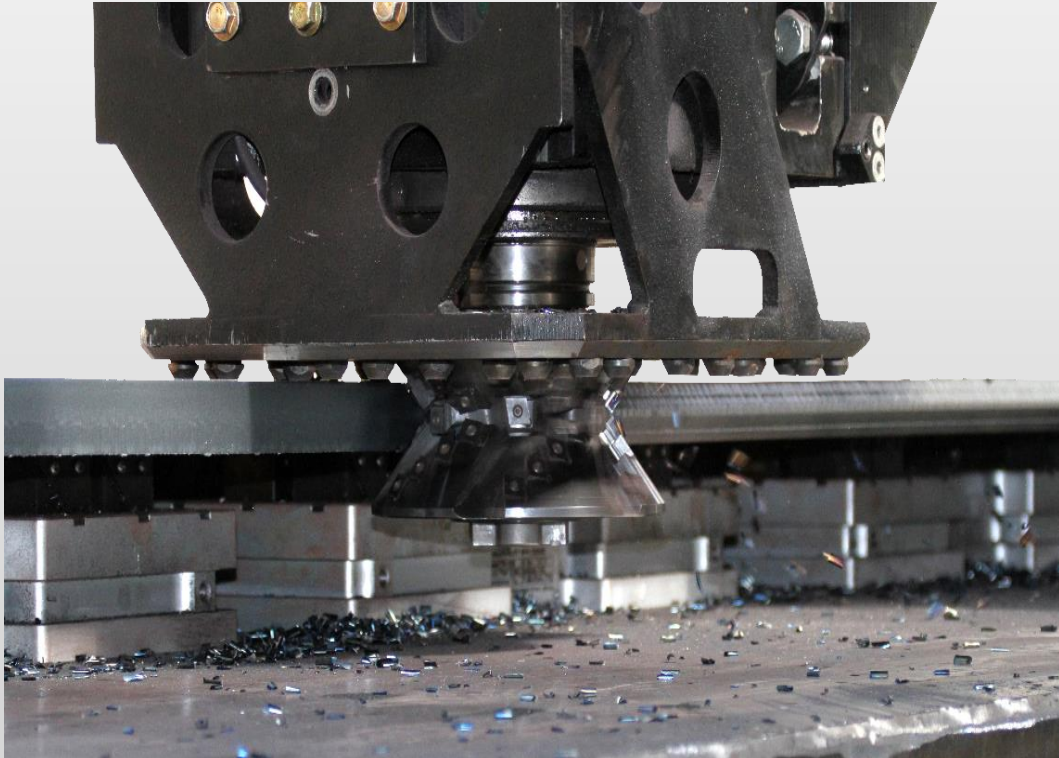


Incorporating CISCAD, at the customer's request, provides a centralized control system able to handle all aspects of the production process, even nestings generation. Easy to operate and accessible to all users, CISCAD NEO is also compatible with the vast majority of post-processors on the market, becoming ideal for working in 4.0 environments.

milling technology

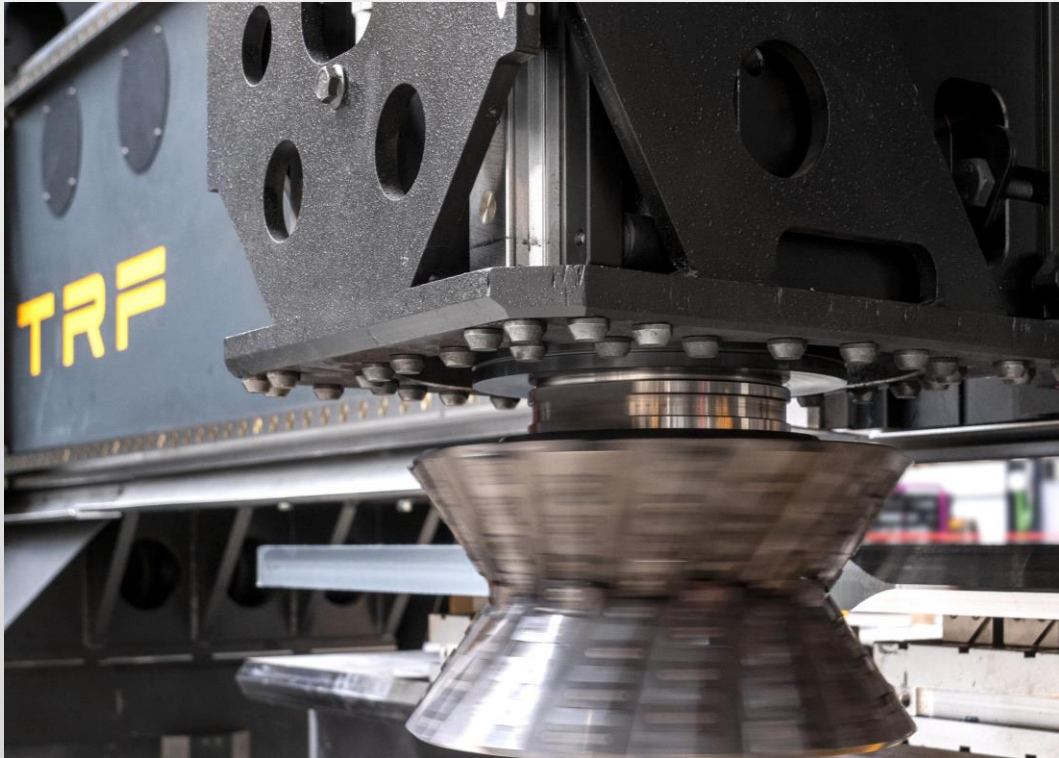


CBM[®] Technology



Despite its robust and innovative design, the truly differential feature of the TRF range is its unique milling system, the Cold Bevel Milling (CBM) technology. This TECOI-exclusive development allows both edges of the plate to be prepared for high-responsibility welding processes completely by mechanical means, without thermal input nor chemical alterations.

CBM[®] Technology



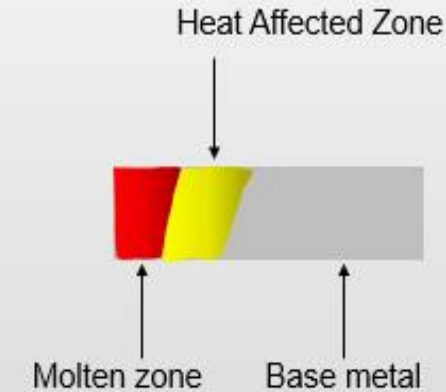
The CBM system manages to remove the surface layers of the plate by applying a milling tool specifically designed with the shape of the bevel to be achieved and connected to a high-power motorized head. This head makes the milling tool rotate over itself at a high speed, enabling it to remove a significant amount of metal chips per revolution.

CBM[®] Technology



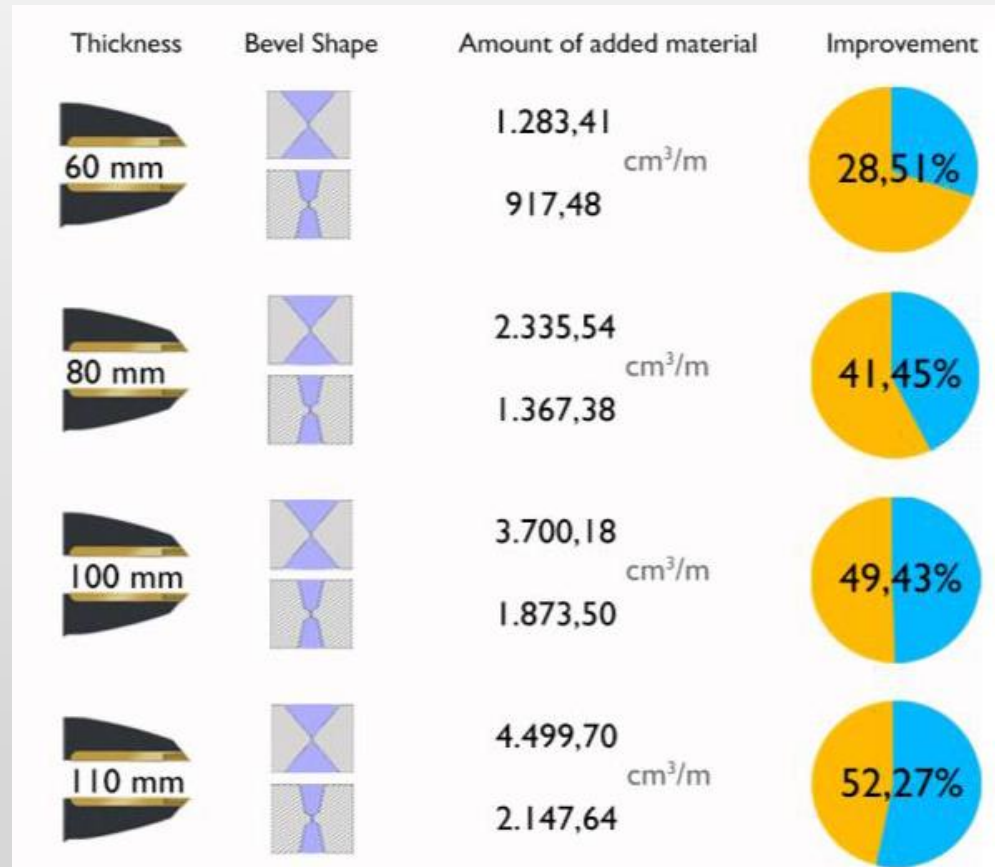
Patented by TECOI in 2009, the CBM technology has been largely used in wind turbine manufacturing, shipyards, petrochemical industries and tanks and pressure vessels construction. This innovation has become crucial because it increases the efficiency and safety of welding processes and enhances the structural integrity of assembled components.

CBM[®] Technology



In this sense, one of the main advantages of CBM technology is that, unlike traditional edge preparation systems like oxyfuel cutting, its use, as based on mechanical chip removal, does not generate heat or add temperature to the processed material, making subsequent welding processes easier and resulting in safer joints and higher quality assemblies.

CBM[®] Technology



Unable to produce bevels as complex and secure as those of CBM, traditional systems also involve the addition of a greater volume of material to the joints. In contrast, the resource savings resulting from the incorporation of CBM technology thanks to the specificity of the bevels can reach more than 50% ratios in large sheet metal thicknesses.

additional information



Cooperation with TEKNOS



TEKNOS, TECOI's renowned plasma cutting machine, has become the perfect complement to the TRF, especially in industries such as wind power that also require oxyfuel cutting. While TEKNOS cuts the plate, TRF mills its edges, leaving them ready to be bent and assembled. Being able to offer these two high performance machines is a strong competitive advantage.

TRF
POWERDRIVE



TECOI has just launched TRF PowerDrive, the high-end version of its prestigious TRF. Designed to offer an unmatched machining capacity and the best efficiency ratios on the market, this new model manages to feature 115 kW milling power on each of its heads, which means up to 300 mm thickness milled at maximum speed in even less time.



Although the new TRF PowerDrive keeps the differential features of the TRF range, such as its double-channel structure for simultaneous milling of both sides of the plate, it adds a renewed system of dynamic dumpers that enhances its significant power jump by neutralizing vibrations and providing an excellent dimensional stability.

customers and
references



Some of TECOI general clients



References



References



haizea
windgroup

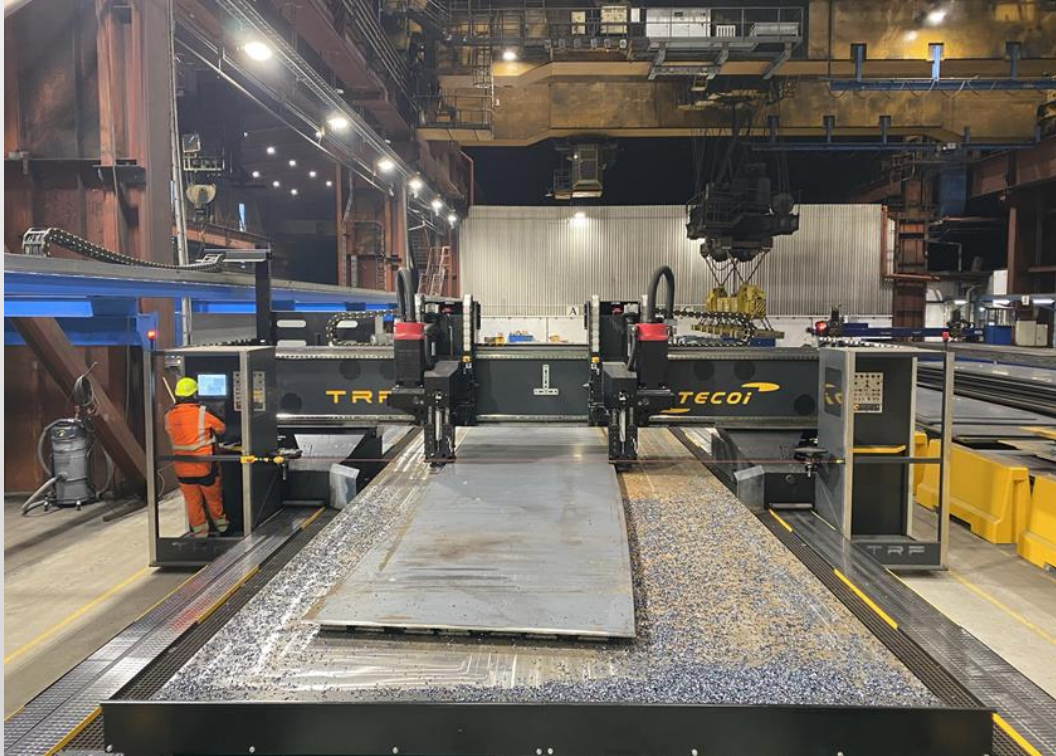
References



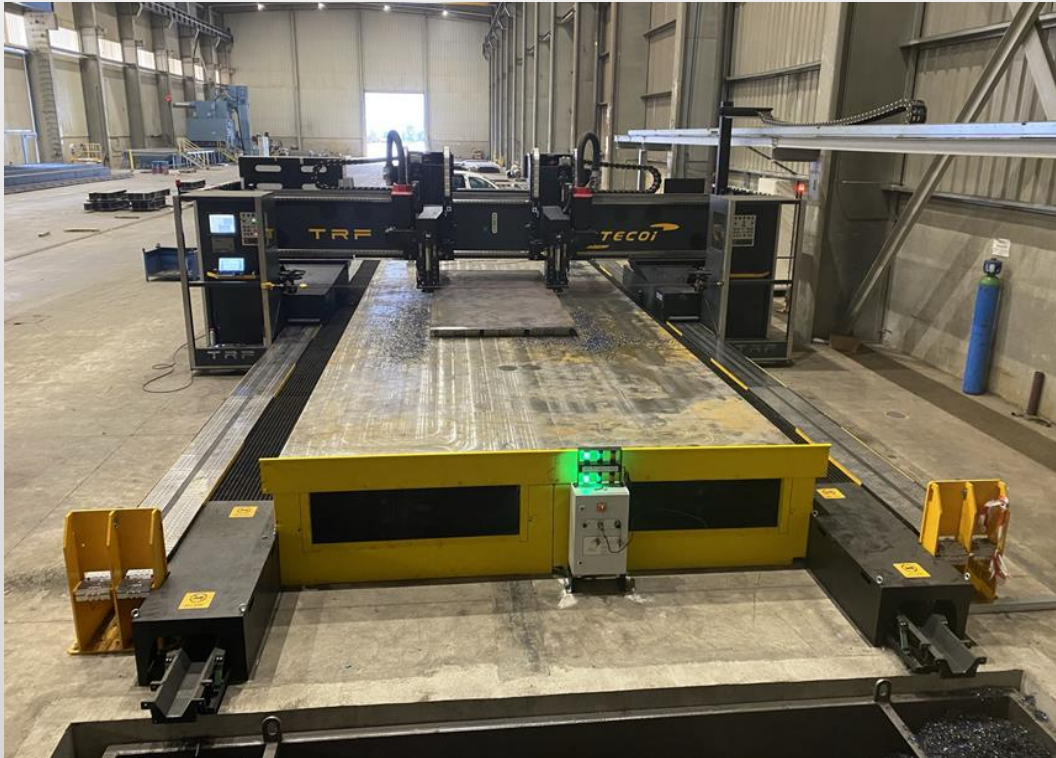
References



References



References



References



حديد اليمامة
yamamah steel



References



 台灣國際造船股份有限公司
CSBC CORPORATION, TAIWAN

References



References



References

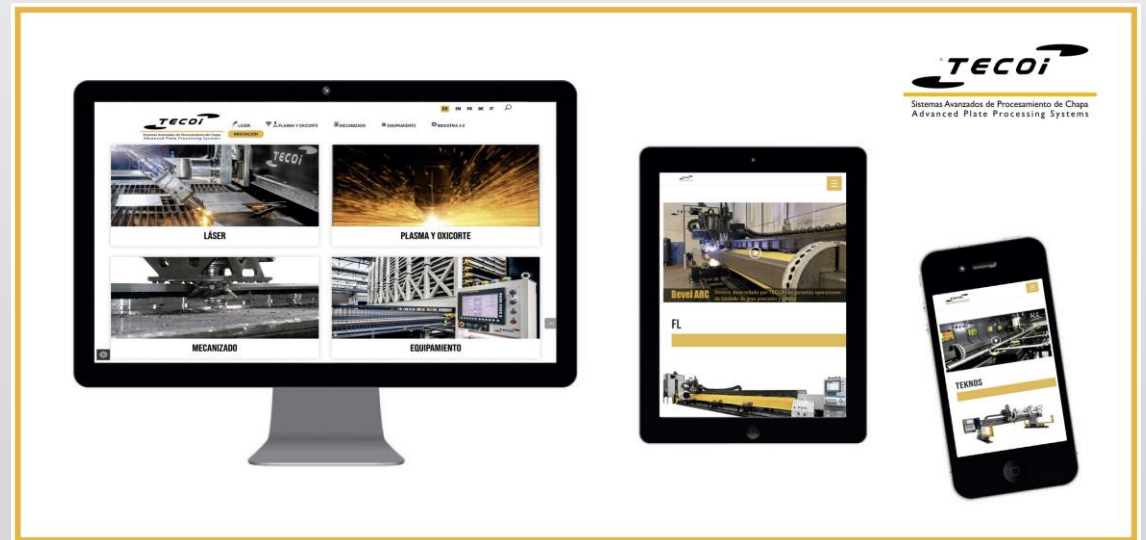


More info.

Scan the QR code to watch **trf** at work...



...or visit www.tecoi.com and discover a new dimension of plate cutting!





Advanced Plate Processing Systems



Facebook



Twitter



Youtube



LinkedIn



Instagram

tecoi.com