

ITALIAN MACHINE TOOLS, ROBOTICS & AUTOMATION INDUSTRY ~ NEWS

May 2024

PIATTAFORMA INDIA PROJECT

NEWSLETTER NO. 89



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KRONOS: PRECISION, ACCURACY AND A NEW PLASMA GENERATOR ALLOW TO OBTAIN THE BEST PERFORMANCES

Kronos is the name of the new range of **gantry thermal cutting machines developed by Ficep**. It's a range of models that can be customized as to size, technology and capacities and are available in different families: Kronos PC, SP e HP. The difference between the models is not only technical, but it depends also on the potential user: PC lines are studied to satisfy the needs of small companies, SP suit the various typical requests of service centers, and the HP instead allow more complex applications required in the shipyards, offshore etc.

All Kronos are studied to satisfy the needs of those companies who produce steel plates, end plates, stiffeners, etc, starting from the raw material to the finished part, carrying out all the cutting processes in a single operation, without moving the material and with one single operator.

Kronos are heavy structured gantry lines available in three different sizes of plate width (2.500, 3.100 and 3.600 mm) and for lengths up to 24 mt. The single beam gantry can be equipped with different (in number and type) cutting solutions: depending of the selected model, it is possible to install up to two plasma straight torches, two bevel torches or one straight and one bevel. The working units are external and positioned along the beam, and slide on two powered carts, each one holding either straight and bevel plasma heads. If needed, one of the cutting heads can be replaced with a spindle (15 kW of power at 6.000 RPM, with ISO40 connection) to carry out pre-holes. In addition to the above, Kronos can also hold up to four oxycutting torches.

In function of the selected model, the size and the technical equipment, Kronos can process plates in different dimensions and thicknesses: starting from 5 mm up to 150 mm with plates from 500x800 mm up to 3.600x24.000 mm (with the bigger model). It uses moreover Hypertherm HPR400 and the new XPR300 and XPR170 generators. The last one represents the most recent innovation in terms of plasma cutting offering better performances, reducing the use and maintenance costs and implementing new functionalities.

Depending on the presence and the number of bevel heads, the number of axes also changes: from a minimum of 4 axes up to a maximum of 10 (5 of which interpolated). The interpolation is a function that allows not only to optimize the use of the axes in the working phase, but also to reduce the dead times: the new cycles developed by Ficep come from its long experience in the manufacturing of machine tools, where the repositioning between two operations is not sequential, but is obtained thanks to the axes interpolation, thus reducing the production times.



The control unit is the valued model Fanuc 31iB5, the same used on the Gemini. This is not the only common characteristic between the two models: they can in fact share the same guides, working in different modes along the same working table. The advantages of the integration between Kronos and Gemini are evident, starting from the cost saving thanks to the use of one single bench for two machines; one single operator can also manage both models thanks to the same user interface.

The Gemini and Kronos layouts are virtually overlying, therefore with the same overall size it is possible to carry out double processing. The higher productivity comes also from the reduced material handling: in this case Ficep offers different solutions to meet the requirements of the single users. The typical configuration involves two separate working areas, each for each machine, and eventually a safety area in the middle to allow working always with both machines avoiding collision.

As alternative, the machines can be arranged to work in sequence: once all the operations are done on the first machine, the plate is moved to the second machine to complete the processing. In the meantime the first machine starts to work on a new plate (the two machines are working simultaneously in this moment). Once the second plate is finished, it is moved to a parking area, and the second machine will finish the job. Kronos is offering high performances working as a stand alone machine, but as above described it's giving its best when combined with a second machine like the Gemini.

In accordance with the Industry 4.0, Kronos allows to manage the information flow through software already existing in the company, or through the Ficep Steel Projects solutions, in order to monitor the entire process from the beginning to the end, and intervening where necessary to optimize the flow.



The wide offer of cutting tables on the market – often with very competitive price – is a matter of fact. For this reason Ficep introduced in its range the Kronos, keeping in mind some essential characteristics like precision, productivity and reliability. First of all, the structure is a monolithic closed beam on which the guides, sliding on rolls bearing, are placed, having triple loading capacities and long operating life. The axes movement is granted by rack and pinion through planetary reducers with hardened and rectified mitered teeth. Racks are assembled with top teeth in order to avoid eventual chips and dust to interfere with pinion and rack. This kind of teeth allows a smoother matching with less noise, higher clamping surface, less wearing and higher loading capacity. The special reducers moreover have a smaller clearance: the dynamic error is one third of the one available on the market. All the above results in a centesimal positioning precision.



FICEP COMPANY PROFILE

FICEP is the world's leading machine tool manufacturer for the fabrication of structural steel and forging industry, with an experience of over 9 decades. Our extensive and innovative product range and its aggressive penetration of the world market has been achieved by the creation of many subsidiaries all over the world.

Located next to the Alps in Varese, Italy, we have specialized production facilities. The main location in Gazzada Schianno, which comprises over 100.000 sqm, also contains Headquarters, R&D, Academy of Technology, Showroom and the main after sales service departments.

Our mission is to satisfy the demand of machinery and systems for the high quality processing of metal profiles in the most profitable markets on a global basis, promoting the Ficep brand and trademark with prestige. Our wide range of machinery fully satisfies always more demanding requests and cover all needs in the structural steel and fabrication industry.

Find out more on <https://ficepgroup.com/en/>



The project Piattaforma India has been promoted by UCIMU – Association of Italian Machine Tools Manufacturers and AMAPLAST – Italian Plastics and Rubber Processing Machinery and Moulds Manufacturers Association. The two associations agreed on the idea that promoting a network of associations and entrepreneurs who have developed knowledge and experience on the Indian market, can be useful in favoring of new paths of development for business. The Indian companies who are interested to form JV, cooperation, technical tie up, purchase machinery etc from/with Italian companies can contact below mentioned address for any assistance:

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