

TIPO C16

Flexible CNC center for punching, marking, drilling, boring, milling, tapping and high definition thermal cutting of large plates



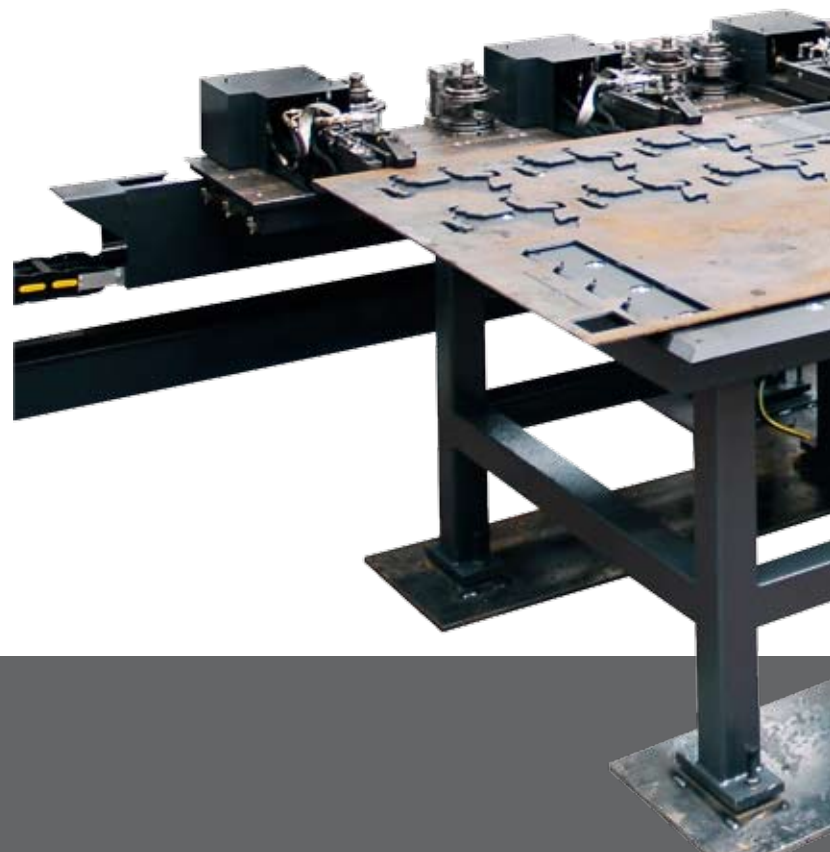
FICEP

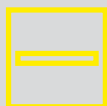
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STANDARD CONFIGURATION



Ficep, founded in 1930, a leading company in the evolution of machines for the structural steel industry, is facing the new millennium as a leader once again by showing the exclusive TIPO C range, FLEXIBLE CNC CENTER FOR PUNCHING, MARKING, DRILLING, BORING, MILLING, TAPPING AND HIGH DEFINITION THERMAL CUTTING of large plates.





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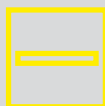
STANDARD CONFIGURATION



TIPO C16 line is designed to comply with the different requirements when automatically processing in one cycle on large plates (3100 x 1600 mm.) and different thicknesses (from 1,5 mm. upto 16 mm.), ensuring high quality, precision, productivity and flexibility.

TIPO C16 line is a flexible CNC center capable of complying with the requirements of both traditional steel fabricators and all types of industry requiring flat components in steel for their particular needs.





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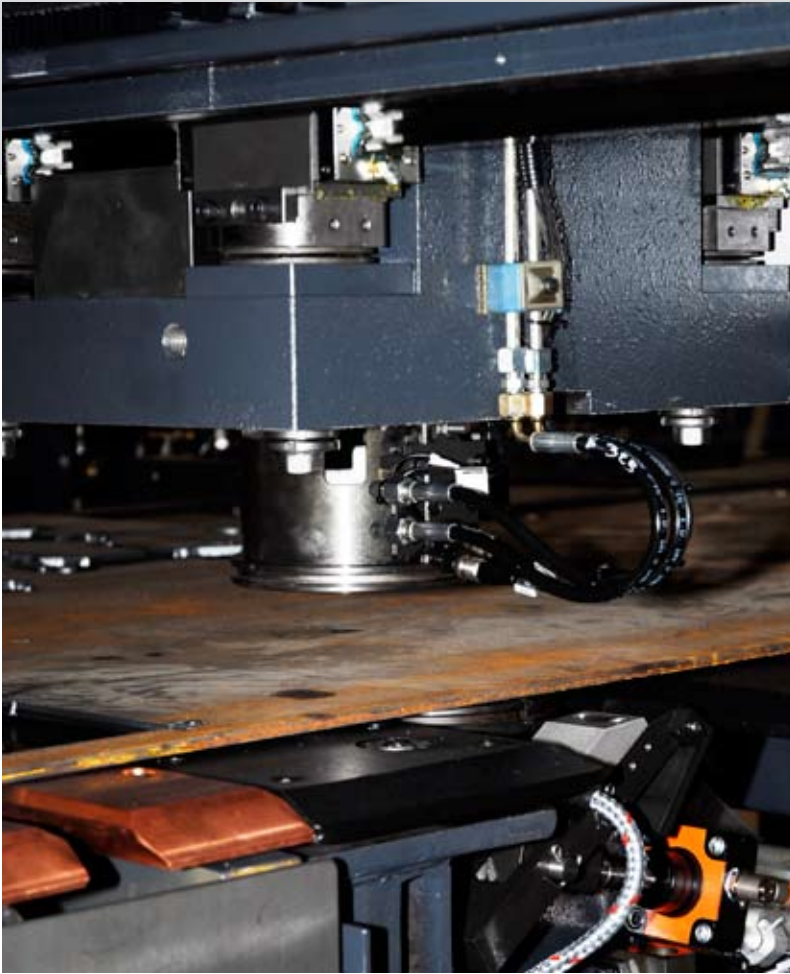


APPLICATION FIELDS

TIPO C 16 line is suitable for the manufacturers of:

- Energy steel towers
- Telecommunication steel towers
- Stationary and moving cranes
- Fork lift trucks
- Bridge cranes
- Lifts
- Removal means
- Asphalting machines
- Earth moving machines
- Agricultural machines
- Machine tools
- Industrial furnace
- Industrial kitchens
- Industrial washing machines
- Transformers
- Industrial vehicles
- Railway vehicles
- Crushing machines
- Tile manufacturing machines

HYDRAULIC PUNCHING



FRAME AND HANDLING

The frame is made of high resistance rolled steel sections, electric welded and stress-relieved.

Sliding guides run on precision rolls; axis move by means of precision grinded ball screws. Any alignment and orthogonal operation is made through sophisticated precision laser equipments.

HYDRAULIC PUNCHING

The punching strength, which is constant throughout the punch stroke, is generated by a special high pressure hydraulic cylinder. This allows the use of progressive punches that considerably reduce the punching force, optimizing the production quality both on minimum and larger thicknesses. The clever tool handling allows automatic compensation of the strokes and the use of standard punches, re-sharpened or progressive punches.

PLATE HOLDER AND HYDRAULIC STRIPPER

The stripper holder system is hydraulic and coaxial to the punch, the aim is to reduce noise to the minimum and to improve the punching quality.



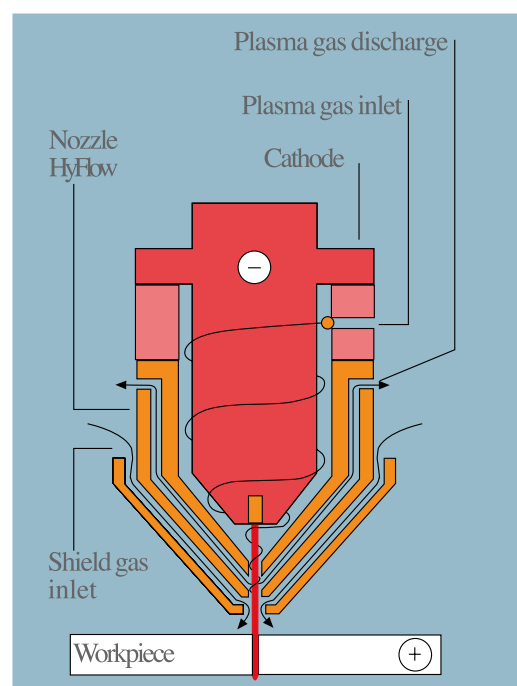
THERMAL CUTTING

Two PLASMA power units are available:

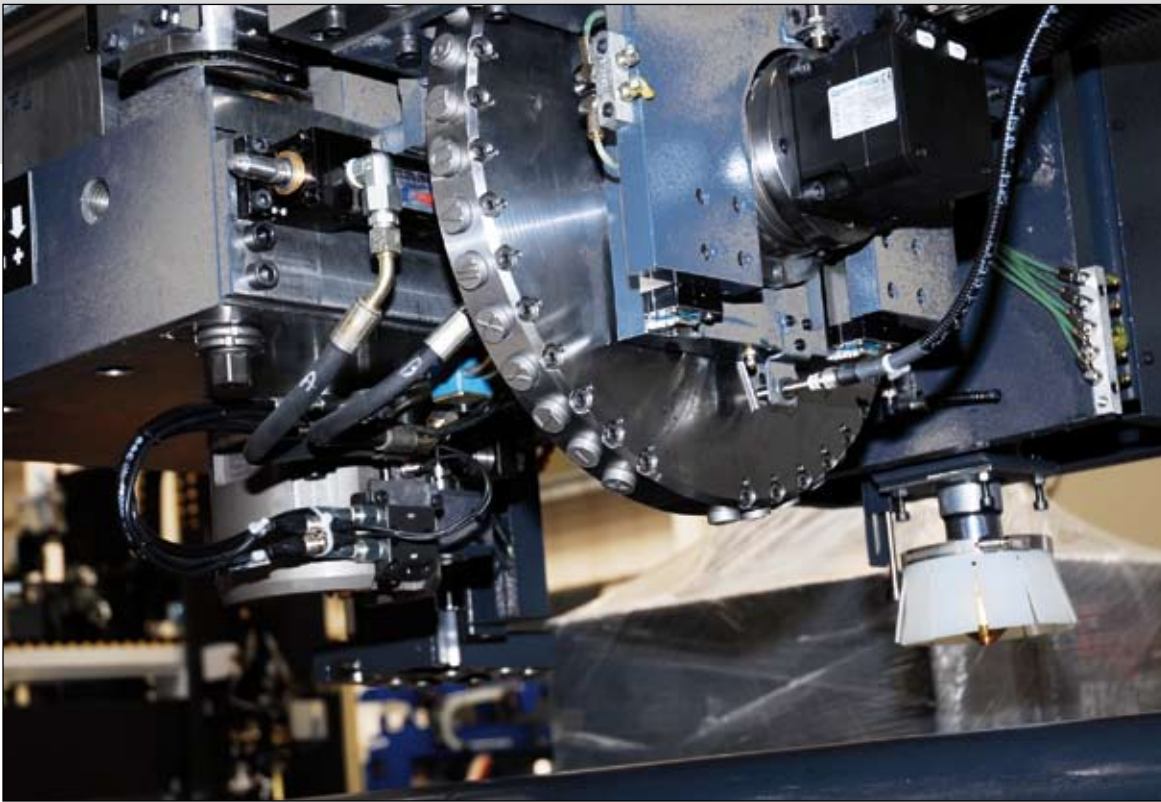
- HT 2000 with compressed air and oxygen: very simple and suitable to those who have no high quality requirements.
- HPR 260 at high definition: very precise, it uses oxygen and compressed air.

All these units take advantage of the sophisticated Ficep system to control the torch height and to handle cutting parameters, this makes the process easier and always ensures maximum performances.

The operation of the plasma torch can be separated from the other working units (Ficep patent) to work independently and optimize the dynamic cutting characteristics.



OPTIONS



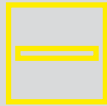
HYDRAULIC MARKING

The FICEP marking unit is the only one capable to ensure a deep marking that remains visible even after several plate treatments. The hydraulic marking unit consists of a set of alpha-numerical characters driven by a servomotor controlled by CNC, also equipped with one hydraulic cylinder providing a 90 kN force.



DRILLING/TAPPING/MILLING

As an option, it is possible to add a powerful drill head with automatic tool change system to carry out drilling, tapping, milling and other mechanical operations with swarf exhaust system.



TABLES



TABLES

TIPO C lines are usually fitted with plate supporting tables. A table with catches fitted with sensors allows plates to be automatically loaded to the pinching position.



UNLOADING OF PIECES

Small pieces upto 1600 x 600 mm. are unloaded through a tilting automatic table. Pieces can be unloaded from the tilting table by a simple conveyor.



TOOL CHANGE SYSTEM

TIPO C16 line in the standard configuration is fitted with an automatic tool changer – the change is made in full safety for the operator. Maximum 12 tools are positioned in line along the table in order to allow the quick change.



HARDWARE & SOFTWARE

FICEP MINOSSE CONTROL UNIT

The new generation control unit, with controlled axes, is based on a fieldbus canopen technology.

The cnc is lodged in a control panel that can be oriented to let the operator have a complete view of the machine.

All the input and output cards are connected to the bus and positioned on the machine, when possible.

The cnc is equipped with:

- Digital inputs (24v – optoinsulated)
- Digital outputs (24v – protected transistors)

The control panel is an industrial pc containing the cnc and having the following specifications:

- 600 Mhz cpu with I2 512 kb “cache”
- 512 Mb ram memory
- Touch screen colour video tft 12.1”
- Keyboard panel and auxiliary pushbutton panel
- 10/100 Rj45 ethernet port
- Usb modem
- 1 Additional usb port
- Windows xp embedded operative system
- Teleservice software

Programming

- Simplified data input (with tables and workpiece on-screen graphics)
- Absolute and incremental values
- Diameters programming
- Linear, matrix and flange patterns

Processing

- Automatic tool assignment
- Unit offset sum
- Values ordering

Execution

- Automatic cycle stop for “setup” modification, and on-screen indication of the tools to be changed.
- Table with drilling parameters



All the indications are clearly displayed on the screen, and concern:

- Current program indication, with clear description of the program running at the moment
- CNC inside and outside alarms
- Registration of the date and time of the last 100 alarm messages
- Diagnostic messages to the operator.

Software Package “WIN-NEST”, specifically studied for nesting of the piece programs into the large plate after having imported them either from a CAD application, or from the software package “WIN-STEEL”. The package runs on an IBM PC or compatibles.



TECHNICAL SPECIFICATIONS

| | | TIPO C16 | TIPO C25 |
|---|-------------------|-------------|-------------|
| SPECIFICATION OF THE RAW MATERIAL PLATE IN INFEED SIDE | | | |
| Maximum length without repositioning and with combined punching-thermal cutting operations | mm | 3100 | 6000 |
| Maximum width | mm | 1600 | 2500 |
| Minimum / maximum plate thickness | mm | 1,5 - 16 | 1,5 - 20 |
| Maximum positioning weight | Kg | 600 | 2500 |
| Maximum linear weight of plate to be processed | Kg/m ² | 125 | 150 |
| Maximum vectorial traverse speed | m/min. | 50 | 50 |
| Working level's height | mm | 1100 | 1100 |
| Positioning accuracy and machine axes repetibility | +/- mm | 0,10 | 0,10 |
| SPECIFICATION OF THE WORKPIECE IN OUTFEED SIDE | | | |
| Max. allowed dimens. for the parts to be unloaded into trap door (option) | mm | 1600 x 600 | 2500 x 600 |
| Max. dimension of the single part to be processed | mm | 3100 x 1600 | 6000 x 2500 |
| PUNCHING CAPACITY (400N/mm²) | | | |
| Punching force | kN | 500 | 1000 |
| Maximum stripping force | kN | 50 | 100 |
| Maximum die hole diameter | mm | 100 | 100 |
| Max. diameter on thickness (using flat punch) | mm | 25 x 16 | 38 x 20 |
| Punching speed with 25 mm pitch on 3 mm thickness: with special power pack and proportional valve (option) | strokes/min. | 150 | 150 |
| Tool change system (option) | no. of tools | 12 | 4 - 14 |
| THERMAL CUTTING UNIT | | | |
| Thermal cutting with standard plasma | | HPR 260 | HPR 260 |
| Thermal cutting with plasma | | HT 2000 | HT 2000 |
| DRILLING/TAPPING/MILLING UNITS | | | |
| Change system | no. of tools | 6 | 6 |
| Spindle motor power | kW | 11 | 11 |
| MARKING UNIT | | | |
| Marking force (option) | kN | 90 | 90 |
| Characters (letters/nrs.) | no. | 38 | 38 |



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