

EXCALIBUR 12 - 1201DE
CNC Automatic drilling line for
shaped and flat profiles



BASIC VERSION



This machine is a classic!

FICEP has manufactured this machine for more than thirty years and it recently became one of the benchmarks for every machine tool manufacturer.

A CNC automatic beam line for drilling shaped and flat profiles, FICEP Excalibur is the first monospindle gantry drilling line to process beams for the steel construction industry working with the "CANTILEVER" system.

The machine is suspended on and moves along its loading table, without interfering with drill chips or with anything else laying on the floor.

This simple and brilliant solution developed as a machine mounted on its loading table offers small and mid size steel construction fabricators a drilling unit at:

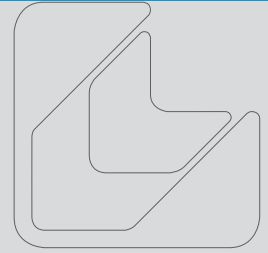
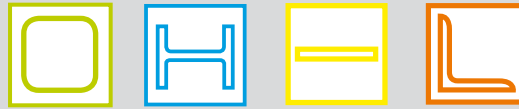
- Low cost investment
- Reduced overall dimensions
- Great flexibility
- High productivity due to its incredible versatility

Thanks to a set of wheels mounted on bearings, the drilling unit main body slides on a sturdy support, crossing the loading table.

This support is equipped with a rack that through a toothed pinion guarantees the machine's precise movement. An electro-mechanical sensor surveys the piece origin and allows it to start the working cycle. The piece to be processed does not move and it's firmly clamped in the working position by an automatic double-effect hold-down (top and bottom clamping).

A probe sensing device can be added to the hold-down in order to survey and automatically compensate for piece non tolerances like web height or flange height.



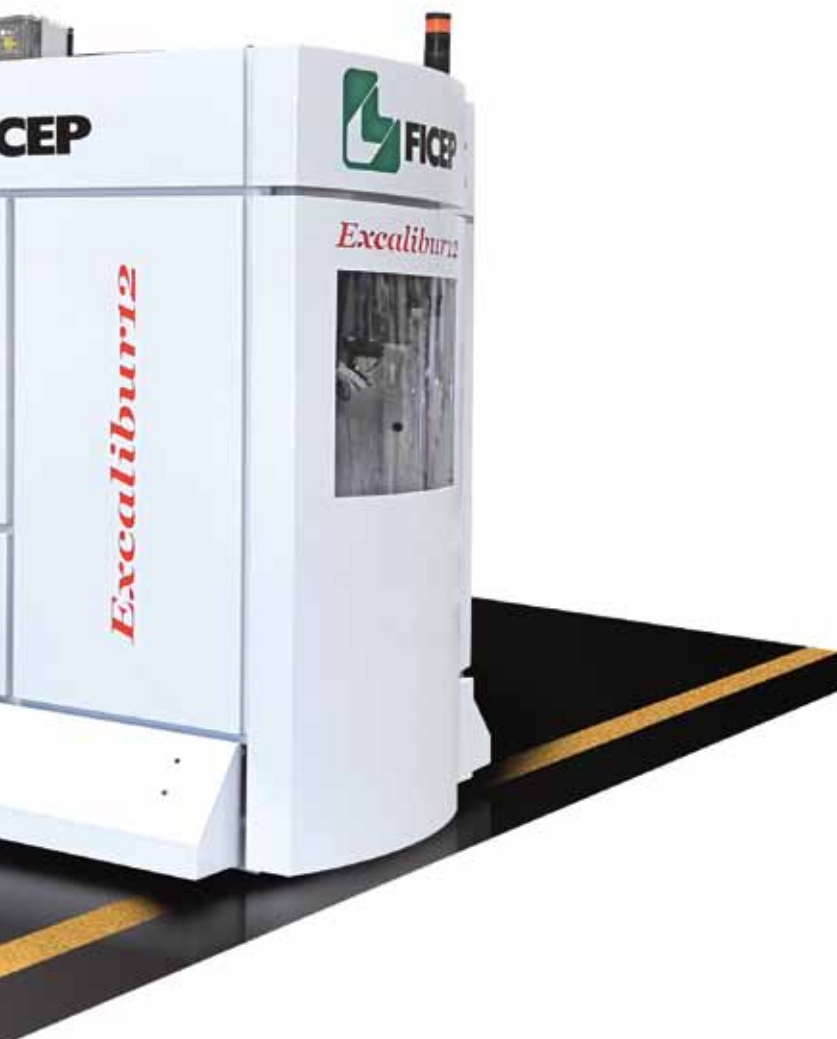


ADVANTAGES OF THIS SYSTEM

- Reduced footprint
- The Excalibur only requires 50% of the space of a conventional beam drilling line.
- No manual programming is required
- The CNC automatically handles the programming of drilling, pointing, tapping, countersinking and SCRIBING (optional) operations.
- The two axis system reduces the electrical hardware by over 60% when compared to multiple spindle beam drill lines.
- No set up
- The Excalibur features not one but two hydraulic clamps that are positioned automatically as part of the movable spindle assembly. This eliminates any requirement for the operator to clamp the piece manually (**photo no.1**).



- Easy material loading because the parts to be processed can be positioned anywhere along the length of the table datum as the system automatically locates the piece origin prior to drilling.
- Versatility because short pieces can be placed along the table in multiples, thereby allowing the operator to continually rotate pieces while the system is drilling.
- The excellent productivity of the Excalibur typically generates the production of 8 to 10 employees with manual methods.
- Return on investment: we can help you estimate how the Excalibur repays it's self easily in less than one year.
- The Excalibur operator is 30% more productive than the operators working on the competition models: the wireless remote control feature of the Excalibur eliminates the need for the operator to constantly have to walk around to the other side of the machine to select the next program (**photo no.2**).



- High drilling performances due to the fact that the Excalibur features a 19 kW spindle motor for drilling up to 40mm holes

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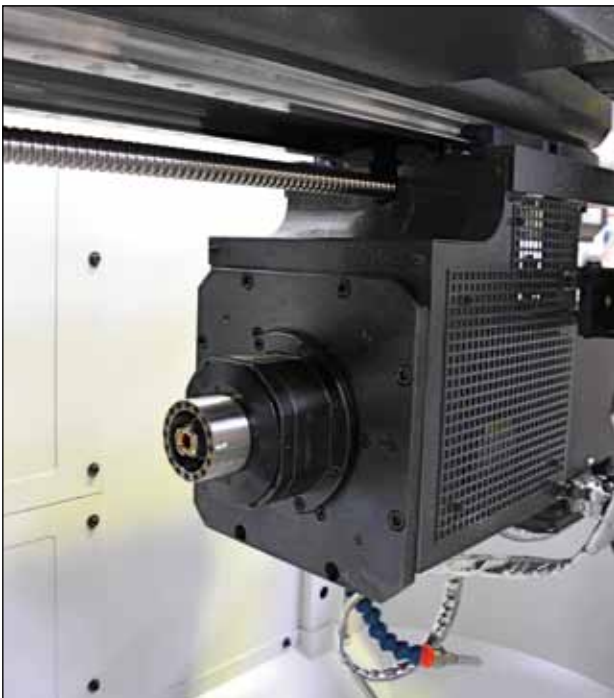
and the spindles' 3000 RPM speed allow the use of high performance carbide insert tools that require higher spindle feeds and speeds. The Excalibur delivers both! **(photo no.3)**.

- Remote system diagnostics: the proprietary FICEP Pegaso control system features remote diagnostic capability. Through a simple phone or network connection, our service support team can perform the same diagnostic routines that we could perform if we were standing at your drill. If we cannot resolve the problem, we can identify what part is required and our service technician can arrive with the required part rather than travel to the customer's facility only to diagnose the problem and then wait till the next day for its arrival.
- Automatic compensation for out of square sections: the material probe contact location is totally programmable. This, in conjunction with our software for out of square sections, eliminates the need for the operator to try to determine where the section's zero point is located and then have to manually

manipulate the CNC program. This feature can also be used to address sections that have been coped prior to drilling.

- Positioning accuracy: the spindle axes positioning is guaranteed by ball screw and CNC controlled servo-motor, the spindle-holding carriage slides on self-lubricating high precision prismatic guides.
- Drills are both internally and externally lubricated thanks to a centralised pressure system installed on board of the machine.

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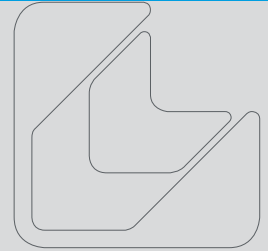
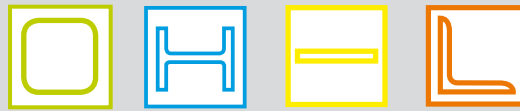


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SAFETY

FICEP takes care of the ergonomic and safety details during the design activities. The machines comply with the CE regulations and each lay out can be designed to suit the customer, detailing the required functionality and safety requirements **(photo no.4)**. Safety is no detriment to production with this solution. On the contrary, Well thought out and engineered safety solutions pressed FICEP engineers to think about functionality and capability to reduce or remove the need for intervention by the operator over the machine cycle. The consequences of this approach, is reflected in a much reduced change from cycle to cycle of the machine performance, giving higher throughput on short and long runs.



OPTIONS

Electronic device
for automatic zero
reference settings



Positioning system with ball screw
and servomotor with 200 mm stroke,
complimentary to X axis to allow milling and
scribing operations together with the drilling
unit vertical positioning axis.



Scribing

The supply also includes an automatic tool-
change system managed by the CNC and
positioned at the side with 6 positions available



HARDWARE & SOFTWARE

PEGASO SYSTEM

Pegaso is the new generation CNC for Ficep machines. PC, CNC and PLC are integrated on a single board, to have the maximum reliability. Pegaso is based on field bus technology: CanBus and EtherCAT, with up to 32 axes controlled.

The CNC is positioned on a mobile control panel, so the operator can have a complete view of the machine. The most of input / output interface devices and brushless motors drives are located on the machine.

Programming

- Simplified data input with graphical direct preview
- 3D piece view
- Diameter programming with automatic tool assignment
- Linear, matrix and flange patterns
- Programming with millimeters or inches (also fractions)
- Linear nesting

Processing

- Automatic tool assignment
- Unit offset automatic summing
- Automatic grouping and ordering of operations
- Setup modification lines generation
- Rototraslation of executing program to follow sheet orientation

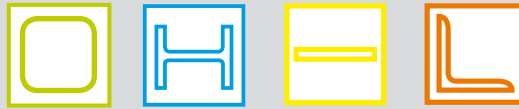
Execution

- Automatic cycle stop for tool setup modification
- Probing capability to adjust program quotes to actual material position
- Automatic software to prevent machine unit collisions
- Automatic software to prevent tool collisions against material
- Tool management with operating parameters and tool life management
- Messages and alarm notifications to the operator using customer language with history log
- Graphic screens to display machine pieces handling tables
- Production times recording



PC characteristics

- CPU AMD Ontario 1.6 GHz Dual Core
- Ram 2 Gb
- Disk Compact Flash 8 Gb
- USB 6 High Speed 2.0 (one on the front)
- LAN Ethernet 10/100/100 Mbit
- Keyboard Industrial PS2
- Display LCD Led technology 15 " with touch screen
- Industrial panel with 42 push buttons
- Op. Sys. Windows 7 Embedded with EWF filter
- Teleservice software for remote diagnostics

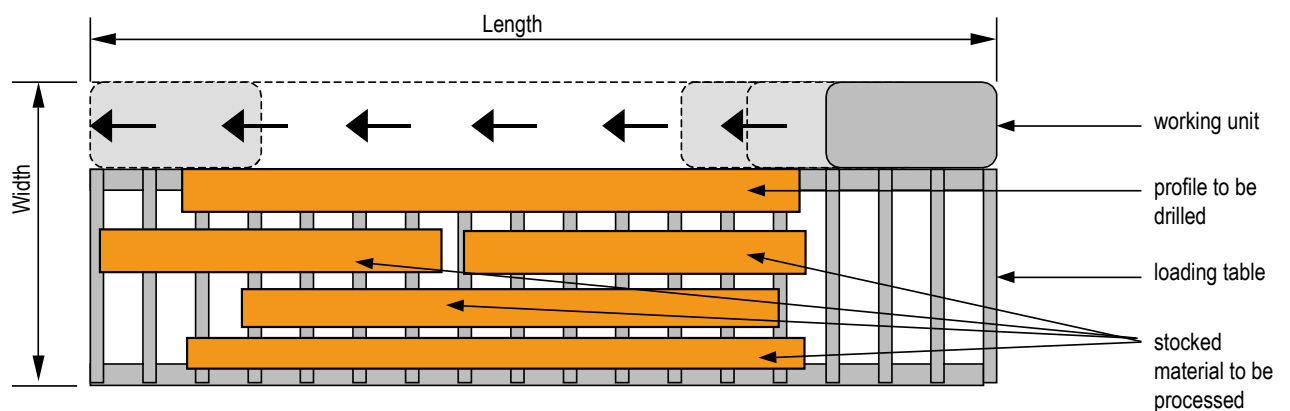


MAIN TECHNICAL FEATURES – EXCALIBUR 12

Standard maximum beam length	12 m
Maximum drilling diameter	40 mm
Spindle power	19 kW
Spindle rotation speed (rpm)	180 ÷ 3000
Max. profile dimension	1200x1200 mm
X axis positioning speed (frame)	35 mt/min
Y axis potitioning speed (drilling head)	12 mt/min
CNC Pegaso control unit	4 axis

Standard configuration - The line can be fitted with rollerway and tables of any length:

Profiles up to	12 m	15 m	18 m
Length	15 m	18 m	21 m
Width	3,30 m		



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