



STEEL
CONSTRUCTION

ANGLES & FLATS
BEAMS & PIPES
PLATES
SURFACE TREATMENT
ROBOTIC WELDING
SOFTWARE & AUTOMATION



NOZOMI

Automatic 9 axes CNC thermal
coping robot



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Automatic 9 axes CNC thermal coping robot

Steel structures that are designed for multiple purposes are comprised of various steel members such as beams, channels, angles, plates, tubes and pipes. The final structure is realized by assembling these steel sections into a finished building, for example.

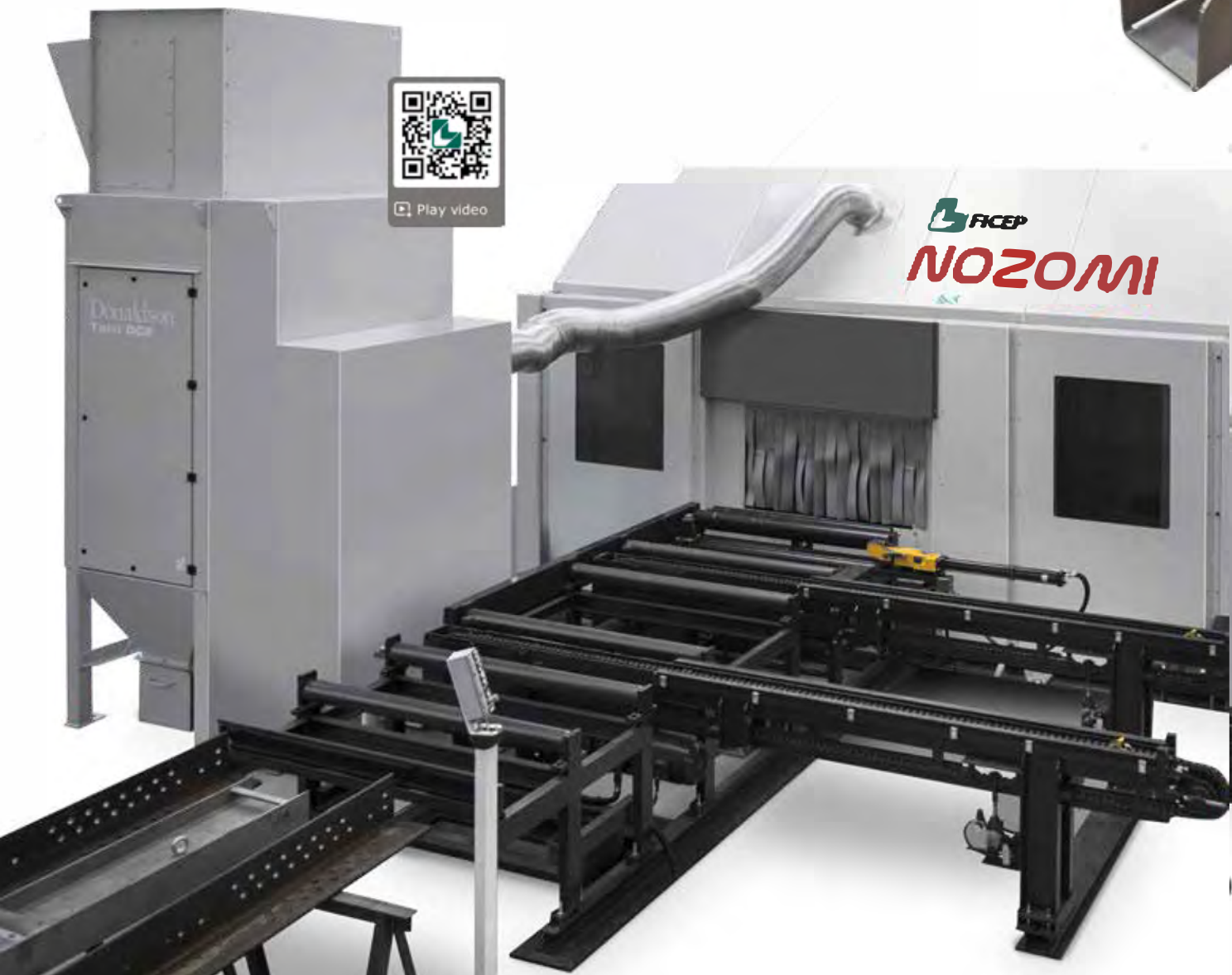
Diverse thermal cuts are required on both the web and flanges during the structural steel fabrication process. In addition, the FICEP thermal robot can also perform part marking, full layout capability and the designation of the required detail elements to be welded on the main member. FICEP employs their patented process to automatically import this layout information into the CNC control directly from the 3D CAD model. This patented process enhances the payback of the FICEP thermal robot and eliminates costly manual layout operations and the possibility of human errors.

The FICEP 9 axis robotic system, including length positioning, is equipped with a Hypertherm plasma torch with the ability to be positioned around the

section to be processed. This four-sided capability is enabled with the utilization of two auxiliary machine based axis which represents a real breakthrough in the thermal processing of structural steel sections.

The robot is controlled by the proprietary FICEP software which optimizes the 9 axis positioning to achieve the most efficient cutting sequence and productivity.

When the material enters the machine, an advanced non-contact laser camera technology is employed to probe the complete section geometry in seconds. This provides the most efficient method to detect a section's mill tolerance deviations when compared to the library of specified dimensions for the actual section. This is required to determine the actual edge and surface locations for accurate and error-free plasma cutting. This new laser technology eliminates the timely process of having to mechanically probe all surfaces prior to cutting which is required on outdated designs.



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Pegaso is the latest generation CNC for FICEP lines where the PC, CNC and PLC are all integrated into a single circuit board for maximum reliability. Pegaso is based upon a field bus technology using CanBus and EtherCAT for controlling up to 32 separate CNC axis.

Hypertherm
Cut with confidence™
True Hole™

The advantages of this innovative new technology can be summarized as follows:

- All the manual operations of layout, marking, thermal cutting and extensive grinding are eliminated.
- Human error for manual operations is eliminated.
- All thermal cutting operations can be done in line with a drill line to save time and valuable shop space.
- The automated cycle is optimized.
- The production times are drastically cut and predictable
- The space dedicated to process these tasks manually is greatly decreased.
- Man hour cost per ton is drastically reduced.
- The labor required for complicated operations is cut to the minimum.

MAIN TECHNICAL FEATURES

- The material positioning device can be adjusted to accommodate typical structural steel sections including pipe. The traveling length of the positioning device and infeed conveyors can be configured to accommodate the specific application.
- The machine features a rigid structure to support the robotic arm to achieve industry leading accuracy.
- A non-contact laser is used to manage material probing and compensate for mill tolerance deviations in seconds.
- Automatic material vices provide material alignment even during cuts where the material must move longitudinally like in the case of beam splitting.
- A hydraulic alignment device is furnished between the first two rolls of the infeed conveyor.
- Detection and automatic adjustment for dimensional mill tolerance deviations.
- Powered exit conveyor to unload the processed parts.
- The latest generation FICEP Pegaso CNC control supporting 9 axes of motion.
- New Hypertherm XPR300 plasma for high performance thermal cutting.
- Hypertherm True Hole technology is integrated to generate the best thermally generated hole quality available.

MAIN OPTIONS

- Exhaust system which is essential with plasma cutting
- Equipment for the processing of round pipes
- Cross transfer tables with carts or catches
- Unloading conveyor for short pieces



Nozomi Coping Robot in line with Valiant drilling unit

NOZOMI Automatic 9 axes CNC thermal coping robot	601 RAZ	1201 RAZ
Section size [min. inch]	3-1/4" x 3/8"	3-1/4" x 3/8"
Profile size [max. inch]	24" x 17-3/4"	48" x 24"
Plasma torch [no.]	1	1

TECH SPECS