



FRC

Automatic CNC thermal cutting lines for steel profiles



The structural steel buildings are made of steel assemblies where profiles (beams, U-channels, angles, tubes) mostly act as main parts. Finished assemblies are joined and bolted one to the other to form the structure.

Straight, mitred and shaped cuts on profile edges or on web and flanges are needed to form the main part geometry. The layout marks will be automatically done with secondary part information aside to speed up the assembly phase and avoid human errors in fitting. All of these processes can be covered with the NEW Ficep FRC coping robot.

The Ficep robot allows the torch to move and orientate around the piece with automatic tool changer for the plasma and oxy torches that are always onboard for a very fast change when needed. The robot is controlled by dedicated software which optimizes the movement and gives simple and essential sequences:

- When the material enters the machine a new laser camera technology is used to probe the part geometry. This enables a very fast recognition of the geometry.
- These real values are compared with the theoretical ones registered in the CNC library; any discrepancies are automatically corrected and the torch will move to the exact position to start the cycle, once the cut is finished, the piece always detaches itself without problem!
- The required shape is chosen from the relevant library and only its real dimensional values are loaded into the program; no time is lost to reprogram the shape; the shapes which are normally required in steel construction are all already programmed in the library
- The torch starts automatically and carries out the cutting of the shapes. The process can be repeated continually without mistakes.

The advantages of these systems are straight forward:

- All the manual operations to measure, mark out and cut disappear
- No mistakes
- Cutting operations can be done in line with drilling units in order to save time
- The processing cycle is optimized
- The manufacturing times are drastically reduced
- Processing is done in a complete automatic way
- The space dedicated to this kind of processing is reduced
- Production costs are lowered
- The labour required for complicated operations is reduced to the minimum