

# Entrepreneurs design automated cutting equipment applicable to various industries

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When the engineer Isaac Navarro Alcazar needed to make two-meter 3D dinosaur figures, he could not find the right tool to make the cuts. So he decided to make his own machine: an innovative, automated and efficient tool capable of making plasma cuts through plating and metal foils such as carbon steel, stainless steel and aluminum, and others.

A graduate of the National Polytechnic Institute (IPN), with a degree in communications and electronics specializing in control and automation, Alcazar and his brother designed a machine that can cut "any type of figures, however complex."

The entrepreneurs called the project "OpenCnc", which is comprised of integrated software and hardware and "CNC" because of the computerized numerical control.

"With this technology, if a circular plate cut is required, it can be made from an AutoCAD drawing with the actual measurements. Then we generate the code, translate it to the computer and the machine does the cutting," explained the Mexican [entrepreneur](#).

The machine measures 1.22 x 3.05 meters, has a mounted plasma torch, and cuts plates up to an inch thick. It can be applied in conventional and artistic ironwork, for example, to design and cut a door or window, plus the system also executes metal channel letters for signage.

It is applicable in various areas, since the machine adapts to the customer's requirements. "To date, we have sold about eight machines and 16 equipment for cutting with a wooden router."

Engineer Navarro Alcazar recalls that when he started making the equipment, he found that all elements had to be imported. Now they manufacture screws, zippers, pulleys and whatever they need to construct the machinery.



The entrepreneur recognizes that this technology is a niche market, because currently, plate cutting is manual, exposing the operator to toxic gases; hence their innovative automated cutting machine is more efficient.

"Our team only requires air and electricity, it doesn't use gases; it can be positioned in the market, because besides plasma cutting [technology](#), it can be adapted to drills, milling machines, lathes and 3D printing equipment, so we developed software for specific needs."

The "OpenCNC" project is in the incubator at IPN, according to the engineer Navarro Alcázar; when they have enough investment, they will formalize the company and get a proper space to make the [machines](#) and the manufacturing process.

"We want to bring this team to the Mexican industry, because we have

been recommended by word of mouth. On the other hand, people think that the machine is expensive and it is not; we manufacture the components to reduce cost and make it affordable for stakeholders."

Provided by Investigación y Desarrollo

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