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CATHARINA DAUM

98 percent less collisions at laser cutting

Removing the element of change: Cutting head collisions resulting from tilted parts are a known problem of 2D laser cutting. For the Spanish job shop Lasercor, this is no longer an issue now that its machines are running the Smart Collision Prevention function.

If you've ever worked with a 2D laser cutting machine, then you're familiar with this situation: The cutting head is rushing over the sheet. A part tilts. The operator's hand springs into action to hit the stop button. In an ideal scenario, the cutting head comes away from a collision undamaged. But machine downtime is inevitable — and this costs both time and money. This was reason enough for Julián Jiménez, Managing Director of the Spanish job shop Lasercor, to put the Smart Collision Prevention function to the test on his machines.

For seven months, the Lasercor production ran a pilot project featuring the demo version of Smart Collision Prevention. In collaboration with TRUMPF specialists, the job shop was able to continually optimize the function's effectiveness. The result was overwhelming. Today, Jiménez's enthusiasm for the function is so great that Lasercor programmers are now using Smart Collision Prevention on all 2D laser machines. "I have seven machine operators who are responsible for a wide range of tasks. We need our machines to run reliably even when someone isn't available to supervise them. Smart Collision Prevention prevents approximately 98 percent of all collisions. It's exactly what we were looking for," says Jiménez contently.

Automatic orientation modifications

Smaller sheet metal parts up to 6 millimeters thick are at particularly high risk of tilting. This is due to the distance between carrier slats. If parts or inner contours aren't sitting on at least three support points, they become prone to tilting, and this creates a hazardous obstacle for the cutting head. The Smart Collision Prevention function prevents this from happening. The feature edits NC files generated by TruTops Laser or TruTops Boost and optimizes the processing sequence by calculating possible collisions and making appropriate modifications.

» **Smart Collision Prevention prevents approximately 98 percent of all**

collisions.

Julián Jiménez, Managing Director LASERCOR

If needed, the function divides up the contours and cuts individual inner contours into pieces (also called “scrap cutting”). Microjoints are used on the approach positions only when absolutely necessary to provide a secure hold on outer and inner contours. The cutting head moves around parts that are already tilted. Smart Collision Prevention calculates the most time-efficient routes for the cutting head and automatically shuts off the cutting gas supply when the head is in transit. This allows parts to be nested more tightly, even those that are at risk of tilting. “The function not only increases the productivity and reliability of our machines — it also improves material efficiency. It’s also much easier now for my staff to remove parts from the scrap skeleton since we have to apply microjoints to a lot fewer parts,” explains Jiménez.

Reliability vs. speed

Currently, Lasercor primarily processes mild and stainless steel in thicknesses from two to 12 millimeters. Smart Collision Prevention has become standard for Lasercor programmers. “The function provides the highest degree of reliability. There’s no reason not to use it. And for sheets that are under five millimeters thick, we couldn’t do without it. The probability of a collision is just too great, and the risk of the cutting head getting damaged is at its highest,” explains Jiménez.

Jiménez sees the Smart Collision Prevention function’s 20 percent slower runtimes as a fair trade. “When there’s a collision, we have to open up the machine, remove the tilted part and realign the cutting head — it takes much more time to do all that than to use Smart Collision Prevention.”



Programming with Smart Collision Prevention is simple and provides the highest degree of reliability, especially when cutting sheets under five millimeters thick. (Pototo Diez)



In addition to 2D laser cutting, bending and engraving services Lasercor is spezialised in laser tube cutting. The company processes a range of materials, including structural and stainless steel, aluminum, brass and copper. (Pototo Diez)



From prototypes to series parts: comprehensive advice is included in the service Lasercor offers. (Pototo Diez)



With his team Julián Jiménez (front row right) stands for quality, service, reliability and cutting-edge technology around sheetmetal. (Pototo Diez)

A stroke of luck

Reliability is also paramount to Jiménez when it comes to Lasercor’s growth and development — nothing is left to chance. The company’s inception in the year 2000, however, was something of a coincidence. At the time, Jiménez’ father—formerly

in the hotel and restaurant business—was in the market for new opportunities. The search led him to manufacture. The specific field of business, however, was of almost secondary importance. He sought out information on everything from crystal engraving to cutting plexiglass, finally settling on laser cutting as the most worthwhile investment. The original company of four now has 85 workers under its employ and is thriving.

In addition to 2D laser cutting, Lasercor offers laser tube cutting, bending and engraving services and provides the automobile, energy and electrical industries with customized sheet metal solutions. "Quality, service, reliability and cutting-edge technology form the foundation of our success," explains Jiménez. This is why Lasercor turns to TRUMPF for its machinery. The company's Madrid facility employs the use of five laser machines, five bending machines and a TruLaser Tube 7000 from TRUMPF, partially automated with a LoadMaster.

Jiménez has big plans for his company's production: "We're looking for challenges and are beginning push into unfamiliar territory, such as working with lead and titanium. And we still have room for more services in our portfolio. Next up for us is laser welding."

This article was first published in summer 2016.

Who?

Cortes Especiales LASERCOR, S.L., Madrid, Spain. Founded in 2000. 85 employees. www.Lasercor.com

What?

A job shop with a wide range of services from prototypes to series parts.

How?

TruLaser 5030 fiber, TruLaser 5040 fiber, 3 x TruLaser 5030, TruLaser Tube 7000 and others.



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