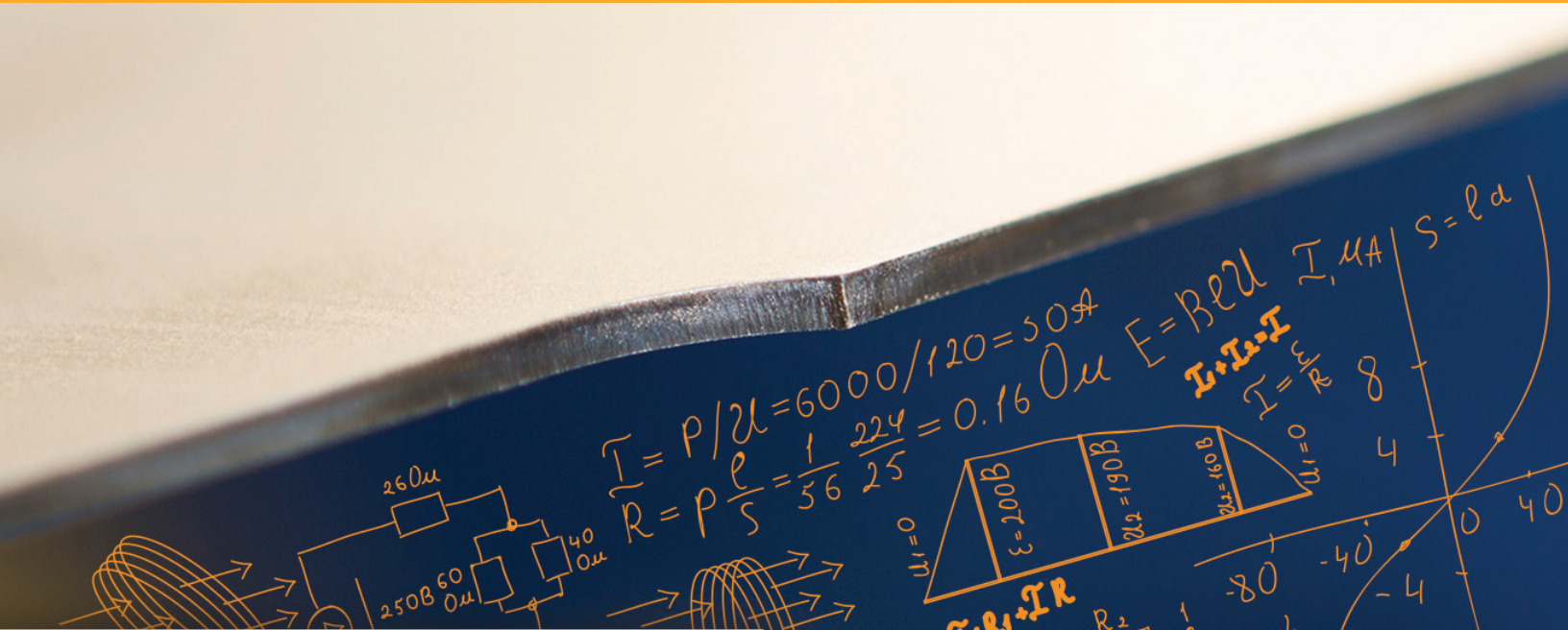


# DEFINING THE LEADING EDGE



We're redefining the stamping industry by blanking at the speed of light

## **WE KNOW COIL PROCESSING**

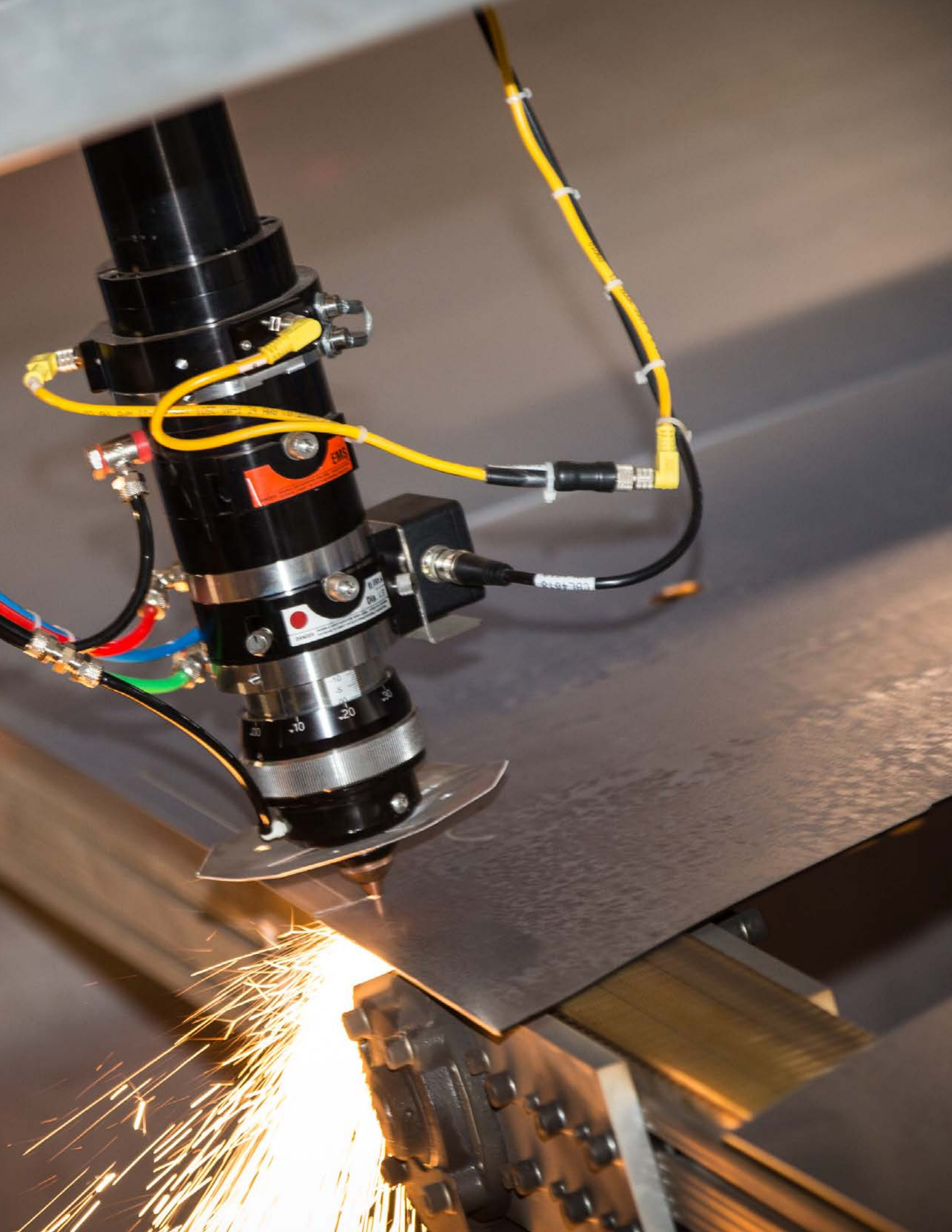
Research and development of the LaserCoil approach to laser blanking was initiated in 2008 by the Automatic Feed Company (AFCO). Founded in 1949, AFCO has extensive experience in developing traditional blanking and cut-to-length lines, providing the company with the insight into innovative processes that meet future blanking needs.

LaserCoil patent filings began in 2009. After the completion of successful pilot programs, LaserCoil Technologies LLC was formed in 2011, and staffed by former AFCO employees, to take the technology to market. This depth of experience provides LaserCoil the right qualifications to deliver effective and unique press feeding solutions along with the advantage of being a related party to Automatic Feed Company.

## **PRODUCTIVITY IN ACTION**

A LaserCoil production solution is the most advanced combination of coil-fed automation and high-speed laser cutting for surface-sensitive metal blanking. LaserCoil machines can produce parts at higher speeds than have been traditionally demonstrated with laser cutting tables. This enables companies to achieve yield rates – into the 60,000 piece range – that allow the consideration of laser cutting blanks over traditional stamping processes. The LaserCoil approach also helps eliminate the need for dies and achieves greater flexibility and quicker changeover. The systems can process a wide variety of coil material in aluminum, mild steel, the new high-strength steels, and other materials as well as structural components in thicknesses from 0.5 to 3.5mm and up to 2.1m wide coil at any length.





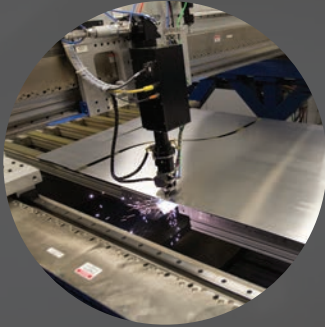






### **INTEGRATION AGILITY**

With roots in traditional automotive blanking and cut-to-length line equipment manufacturing, we understand that any viable laser approach to high-volume blanking requires that the system be able to integrate into existing lines. Whether you need a completely new line or are interested in retrofitting a line with a LaserCoil station, we can propose a cost-effective solution.



### **HIGH-SPEED GANTRY**

Maintaining production rates on advancing coil while meeting infinite part configurations for coil widths of up to 2.1 meters required some unique thinking. This drove our approach in designing a hyper-speed, linear induction motor-driven three-axis gantry. It's fast, agile and stable during high-speed, complex motion paths. Furthermore, its module design enables us to add coordinated cutting stations.



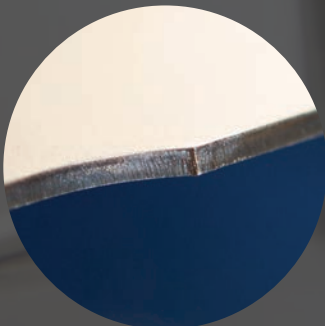
### **DYNAMIC CONVEYORS**

Supporting the coil, transporting the finished blanks and shedding scrap presents a monumental challenge when considering the use of a laser for coil-fed blanking. Our solution? We created an approach using individually indexed, dynamic conveyor lanes. This approach provides the web support when and where it's needed while dynamically leaving an open pathway underneath the strip during cutting. Furthermore, this process allows scrap to naturally shed via gravity.



### **MULTIPLE HEADS**

From an economical standpoint, we understand that part yield is paramount. While we accomplish impressive production rates with a single cutting head, we have designed our system to incorporate multiple, modular cutting heads. This allows the workload to be distributed, increasing production to rates that are comparable to conventional blanking.



### **BETTER EDGE QUALITY**

Through a combination of proprietary optics, advanced cutting software algorithms, and highly optimized fiber laser technology, we are able to deliver superior edge quality. Our process doesn't produce dross or heat affected zones, and has virtually no burr. This high level of quality improves forming as it's more resistant to tearing and allows laser welding directly to our cut edge.

## THE BLANKING SOLUTION FOR LIGHTWEIGHTING

A key technology focus today is the use of lightweight materials. By 2025, Advanced High Strength Steel/Ultra High Strength Steel usage in body and closures is expected to double and the use of Aluminum to quadruple.

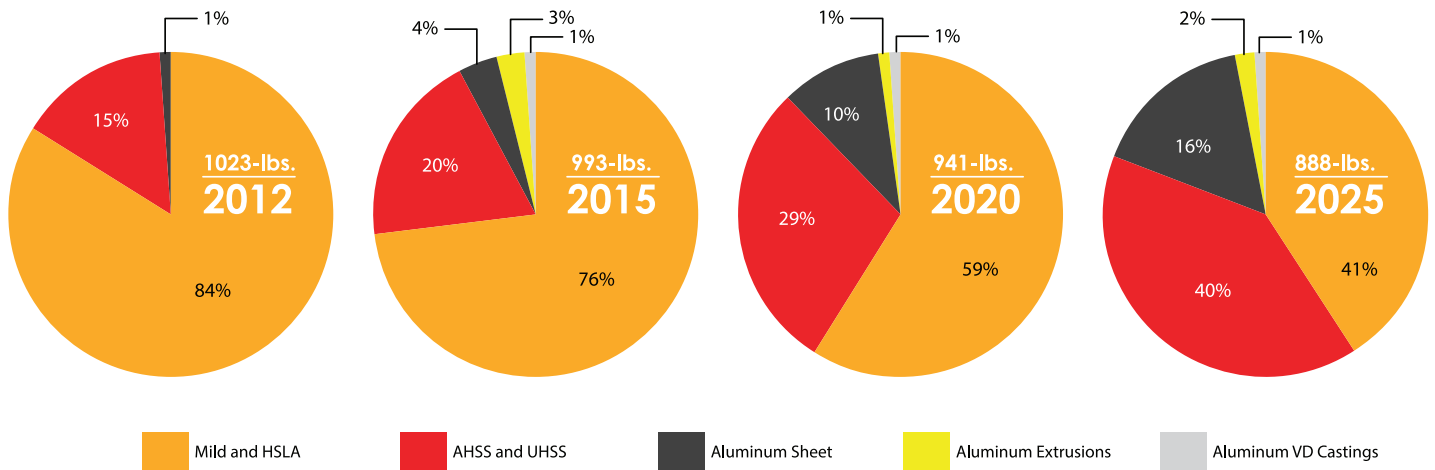
The chemistries and thermo-mechanical properties of advanced steels impact manufacturing in two major ways. First off, stamping of these materials typically requires increased forces. This can impact tooling as well as requiring a high strength steel application to be moved to a larger capacity press line to achieve the same cut. This results in a significantly higher maintenance cost of the tool used to do the cutting as the blades dull at an increased rate.

Secondly, as the hardness of the advanced strength steel material increases, the propensity of micro-fractures occurring along the cut line also increases. These micro-fractures can develop into splits during the forming process.

Laser blanking eliminates both of these issues. Tensile and yield strength has little or no impact on the laser cutting speed, and lasers don't get worn down by material toughness or thickness. Plus, the cost of laser consumables is far less expensive than the cost of maintaining dies and tooling.

Additionally, replacing a mechanical shearing process with laser cutting reduces work hardening issues and micro-cracks to deliver a clean edge. Micro-fracturing is almost non-existent with a LaserCoil process. There are no formability issues in the edge and almost zero dross accumulation.

## North American Light Vehicle Material Mix for Body and Closures



Source: Ducker Worldwide

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TECHNOLOGIES LLC

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Japanese Letters Patent No. 5591831. Chinese Patent No. ZL2009801138247. Other patents pending.  
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