



COMMERCIAL VEHICLES

FLEXIBILITY OFFERED BY LASER CUTTING OF BENT TUBES

VDL BELGIUM

VDL Belgium is part of the VDL Group from Holland that is made of 87 different companies. VDL Belgium manufactures high quality mechanical components for the automotive industry. It supplies to some of the group companies and also to some prestigious Customers outside the group. Tube processing is one of the important activities of VDL and with LT-FREE they have solved the problem of laser cutting of tubes after bending.



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VDL Belgium became a member of VDL Group in 1986. At that time it was known as AED Denies and was an automotive seat supplier to Volvo and Peugeot. In 1988 they moved to Aalst near Brussels and over here we met the Managing Director Mr. Marco Van Tongeren, his future successor Mr. Danny Dee Rouck and the Technical Director Mr. Salvatore Abraini.

Van Tongeren told us about the fire accident in 2000 that almost destroyed the factory and how at one point of time the company was thinking of abandoning the whole activity rather than restarting from zero. Fortunately they decided to restart and specialize in exhaust system manufacturing with Scania and Volvo as their main Customers.

Today the company has 16,000 m² manufacturing facility with 100 employees. It is the first company from the group outside the Dutch borders. In some cases, VDL is operating as a Tier1 or Tier2 supplier of fully assembled exhaust systems or single bent, end-formed, cut and welded components to most of the European Truck Manufacturers and the big bus manufacturers or other Tier1 suppliers. VDL's vast experience and modern manufacturing facility allows it to serve Customers from different sectors with different requirements by offering best service in terms of quality, cost and timely deliveries.

To our question "What does it mean to be a supplier to such important companies and what are the essential factors about the production that have to be taken into consideration?", Marco Van Tongeren answers "Cost, quality and delivery – these are the three most important aspects of our products. We manufacture custom made components starting from 3D drawings received from the Customers. The parts we manufacture are getting more complex day-by day".

WHY LASER CUTTING OF BENT TUBES?

"We already had 15 years of 2D laser cutting experience when a few years ago, we started our discussions about laser cutting of bent tubes with the BLM Group. At that time, BLM's 5 axis laser cutting machine was dedicated to cutting bent tubes and that we needed, but we were not convinced that its productivity was sufficient to satisfy our requirement. Then BLM presented LT-FREE and we decided to move forward and invest in this system".

Abraini adds, "The biggest advantage of LT-FREE is the possibility of working with two robots and two tables for positioning the components. This maximizes the use of the fiber laser by permitting the loading / unloading operations without interrupting the cutting process".

There are many important advantages of using the LT-FREE system; "may be the cost of a single operation has not changed much but the advantage in terms of time and quality are huge". At this point M. Van Tongeren shows us a bent tubular component with four laser cut openings at 90° with respect to each other and other cutting operations on one end and miter cut on the other end and explains that earlier this part was manufactured in traditional manner in six different manufacturing steps and now with LT-FREE only three steps are required.

“ With LT-FREE we are faster, deliver clean parts with better quality and save costs on accessories like dedicated fixtures to hold the component in different traditional processes” concludes Van Tongeren.”

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COST SAVINGS

“Our production process has changed with LT-FREE and it is more efficient. In some cases we were able to save up to 50% on costs compared to the past.”

Everyone in VDL appreciates LT-FREE’s capability of cutting almost any type of component and the flexibility it offers. “LT-FREE has drastically reduced our set-up time and this is a very strong point for LT-FREE, even compared with other similar systems on the market”. They show us another component which earlier required seven different manufacturing steps; now those are reduced to three: cut to length, bend and cutting on LT-FREE after bending. The level of flexibility offered by LT-FREE with two handling robots is unparallel in industry. This flexibility means always finding a solution to the processing requirements of any given component.

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USER-FRIENDLY

Talking about the user-friendliness, M. Van Tongeren says “the initial period was difficult, none of the people working on the system had any experience with the laser and it was not simple to work on a system that is completely different compared to the ones we were used to. On one side the traditional methods and on the other side some familiarity with laser sheet cutting, but laser tube cutting is another story because tube is tube and it has its own peculiarities, two different worlds”.

Abraini gives an example that shows the flexibility and short set-up times of the system achieved by them. “We had to develop a new component with six different cutting operations. We started at 8 in the morning and in five hours at 1PM; we had even finished the production of the pilot lot. With traditional method that required the design and manufacturing of different fixtures, we would have needed 3 days to have the same result”. “With LT-FREE in 5 hours and with much better quality” underlines Van Tongeren.



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saving on cost/piece up to

50%

3
steps

to produce a finished part (cutting to size, bending and laser cutting of bent tube with the LT-FREE system), compared to 7 in the previous process.

HIGHER PROCESS RELIABILITY

Abraini touches another interesting aspect: “Customers ask for tight dimensional tolerances on their components. We have seen that the tolerance requirements of the LT-FREE system to properly cut a bent tube are essentially the same as required by the Customers. In short, if the bent component is sufficiently accurate to be cut on LT-FREE, then we are sure that it will also be acceptable to the Customer. So LT-FREE also works as a quality inspector and thus makes an important contribution to the overall process quality. There is one operator who operates the bending machine and the LT-FREE, so if he does not bend the tubes properly, he only has to deal with the problem in the successive step”.

About relations with BLM Group, M. Van Tongeren thinks it is a mutually beneficial relationship. “BLM turned out to be a reliable partner who listens to Customers. LT-FREE is a new product and like every new product it has to go thru’ the improvement cycle in general and also as far as our specific requirements are concerned. BLM was always there to help, improve and solve the problems that we faced”. Definitely there is mutual interest in this case because a Customer like VDL can contribute a lot to the overall improvement process.