The benefits of the Lasertube used by Polaris Industries, an American producer of recreational vehicles.

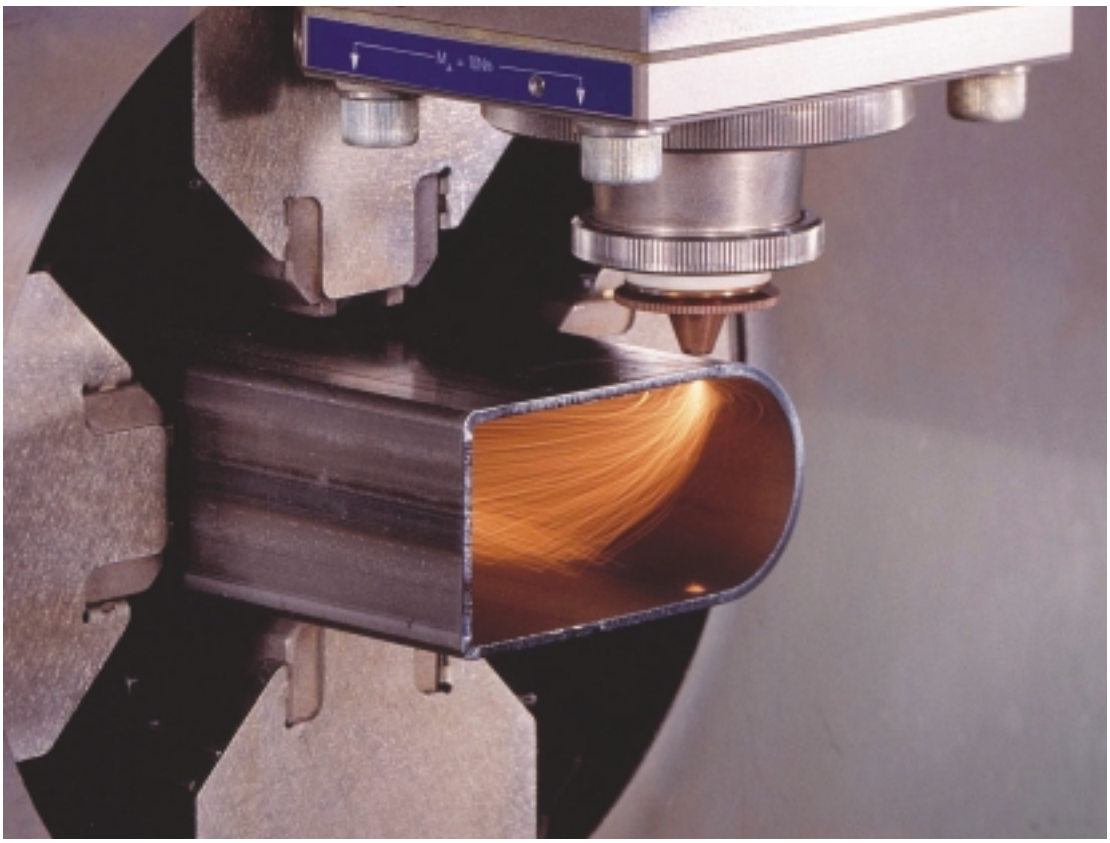
The Lasertube in place of six traditional operations

Polaris Industries, an American leader in the production of vehicles for outdoor recretion, produces products having a substantial metal tubular component. Up until 1999 this company used multiple convetional processes, typically using up to six individual machines, to fabricate a tubular component for one of their products.

By 2000 the manufacturing engineering department was able to identify a unique but proven lasertube cutting system supplied by ADIGE as the most ideal tube cutting system. The evaluation and application testing of this process confirmed the possibility of streamlining the process allowing Polaris to consolidate, in some cases, six different fabrication steps into one continuous tube-fabricating process providing a significant reduction in cost and an increase in quality.
In December 2000 Polaris completed the installation of its first LaserTube system and started production on snowmobile and all terrain vehicle (ATV) frames, and steering and suspension components. The feature that quickly impressed the US technicians was the ease of use of CAD/CAM software that comes standard with the system. The software is parametric and allows modifications to be made, like the simple changing of a dimension, with the remainder of the program carried out automatically without change. Within a few weeks the system was running on three full shifts, five days per week.

74% Cost reductions

After the first six months of operation the manufacturing engineering department performed a detailed analysis to compare actual results obtained against the original forecast. The analysis compared 14 tubular production parts and showed that the laser tube-cutting system removed an average of 74 per cent of direct labor costs on an annual production volume of 650,000 parts.



High repetition capability

An immediate benefit of the laser tube-cutting system was the precision of the process. The tight axis positioning tolerances of the system provides parts that are well within drawing tolerance specifications and are considerably more consistent than tubes produced by traditional fabrication methods. The system allowed increased productivity in the robotic welding cells while reducing rework. Over the past two years the Polaris quality department has been able to reduce tubular component inspections by 50 per cent, because of the consistent results and high confidence level of the process compared to previous less sophisticated methods.
The principal beneficiaries of all this were the welding and final assembly departments, who experienced a dramatic improvement with welding cycle times reduced by approximately 60 per cent in some cases.

A prototype in 30 minutes!

The flexibility derived from laser cutting has stimulated the introduction of innovations and also the quality of the project undertaken as, liberated from the fixed costs of equipment for new components and from the necessity of seeking investment for new machinery,
the rapid-prototyping capability of the Lasertube system can enable the manufacturing engineering department to put newly designed tubular components in the designer's hands within 30 minutes after the design is completed. This, naturally, has increased the speed - to -market of new products, a key element in the strategy of many market leaders like Polaris Industries.

Today, Polaris has already installed three lasertube systems which cut the suspension, frame, steering and other similar components for a broad range of Polaris products, including snowmobiles. The installation of these systems has helped Polaris dramatically reduce the cost of production, further improve product quality and reduced downstream welding and assembly costs.
This has also eased the development of new products. An innovative choice that has given better results than before!