Additive Manufacturing

Processing flexible materials
Flexible manufacturing technologies are increasingly gaining in importance. The additive manufacturing processes are receiving special attention, because these have several advantages over conventional subtractive production methods.

With subtractive methods, such as milling, boring and lathing, material is removed to shape the component. With additive methods, by contrast, geometries are created by joining materials. However, conventional additive manufacturing processes generally have low material throughput and therefore cause high process costs.

With our expertise in processing flexible materials, our many years of experience in automation and process technology, as well as metrology, we have developed a highly flexible additive manufacturing process. Using the so-called patch placement method, solid components can be manufactured from flexible material cuts. The patch placement method connects the material efficiency of additive processes with high material throughput.

Patch placement
In this process, materials are fed from a roll, cut into contours – the so-called patches – using lasers and additively bound together into a component.

The patches are normally combined using a surface weld. Thus it is possible, similar to the 3D printing process, to generate a wide variety of component geometries from different materials.

However, compared to 3D printing, the patch placement method has significantly higher material throughput and shorter production cycle times.

With the patch placement method, modified or even new products can be produced on the same machine, without the need for costly retooling or even replacements.

The technology thus facilitates simple, fast product development as well as a highly flexible, automated production process. This allows complex components to be economically produced – from one-off to series production.
Founded in 1987, Manz AG is a global high-tech equipment manufacturing company.

In addition to the CIGS fab turnkey production line in the Solar segment, the company focuses specifically on the automotive industry in the Electronics and Energy Storage segments.

The company, listed on the stock exchange in Germany since 2006, currently develops and manufactures in eight countries with around 1,700 employees.