

## **HOMAG laserTec Patent underpins technological leadership**

**With disclosure a new patent granted to HOMAG Holzbearbeitungssysteme AG in February 2010, the manufacturer is staking out its claim to technological leadership in the field of laserTec. Right from the beginning, HOMAG has attached particular importance to the three most important factors from the customer's viewpoint: Workpiece quality, process reliability and piece costs.**

### **Workpiece quality**

Over 4,000 visitors to the Innovation Center at the LIGNA had the opportunity to appraise unique benefits of the **laserTec** process, where the almost invisible join (referred to as the zero join) met with an enthusiastic response from punters. Over the past 12 months, more than 30 **laserTec** systems have already been sold. Users come from every sector of the furniture industry in Germany and abroad, and include almost all market leaders in their respective segments. Exhaustive trials have shown that the new technology is capable of withstanding the whole range of glue joint testing processes in respect of heat and moisture resistance. Parallel developments are under way aimed at deploying the **laserTec** method on processing centres, an innovation which will allow the same high standard of workpiece quality to be used for edging shaped components. As soon as this development work reaches the series stage, HOMAG will not lose any time in offering this process to customers in the form of a sensible performance package.

### **Process reliability**

The controllability factor is key to the capability of any new process technology. During the development phase, HOMAG attached particular importance to qualified testing and to ensuring process reliability.

Alongside extensive test series over the past 5 years, pilot users have also been gathering practical experience with the new technology over the last 12 months. This exhaustive testing program has benefited customers, some of whom have already been producing for over a year. One positive effect which has become evident, for instance, is that due to the use of the diode laser, **laserTec** is significantly easier in terms of operation than conventional methods using hot melt glue, taking the strain from operating staff and enhancing process reliability.

The operating principle of lasers differs depending on the application. Because the glue layer is only heated over the surface when using CO<sup>2</sup> lasers, it is not possible to heat the glue layer through evenly. Diode lasers, by contrast, penetrate the glue layer and use absorbers to heat the glue through evenly. Consequently, sustainable process reliability at low cost can only be guaranteed using diode lasers.

### **Piece costs**

When it comes to calculating piece costs, alongside the purchase price, running costs also have a major part to play. The HOMAG development focused right from the beginning on diode lasers due to their substantially lower energy and space requirement compared to their CO<sup>2</sup> equivalent. To generate a beam output of 3 kW, the diode laser requires a connected load of around 15 kW. A CO<sup>2</sup> laser requires around 5 times the electrical energy, i.e. 75 kW, to generate the same beam output. In addition, gluing using a diode laser allows deactivation in the gaps between workpieces, which is not the case with a CO<sup>2</sup> laser. This adds up to considerable savings in energy costs. Another cost benefit of using a diode laser is that, unlike a CO<sup>2</sup> laser, it operates without the need for laser gas.

### **Outlook**

Visitors to the Holz-Handwerk in Nuremberg were provided with irrefutable proof that this unique technology with its outstanding workpiece quality is

not just of interest to industrial users. HOMAG was the only exhibitor to feature a **laserTec** machine, and convinced cabinet makers and joiners of the many benefits of the technology with a live demo on the stand. Judging by the response, and given that woodworking shops aspire to the same high quality standard as industrial manufacturers, the **laserTec** process is set to also take the woodworking shop sector by storm.



**Fig. 1:**  
Workpieces with **laserTec** edges



**Fig. 2:**  
**laserTec** in the InnovationCenter at the Ligna 2009



**Fig. 3:**  
KAL 330 laserTec at the Holz-Handwerk 2010

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