

## HOMAG at Ligna 2007

# Efficiency and economy in edge processing - a comprehensive offering

At Ligna, HOMAG Holzbearbeitungssysteme will exhibit its innovative machine technology, designed to satisfy every requirement with regard to versatility, custom production, efficiency and economy. The suitable solution in edging technology and the preceding and following processing operations is available for all performance classes and company sizes. Highlights include innovations in lightweight design for profitable custom production and highly versatile processing centers.

### Innovative edging and mounting technology in lightweight design

At Ligna, HOMAG will unveil new technologies for edging lightweight panels that go beyond the familiar procedures such as gluing rails and attaching a reinforcing shoulder joint. In the new **DoubleEdge process**, the decor edge and the reinforcing shoulder joint are bonded to form a single part, and then glued to the narrow surface of the panel in a single work step. This patented process also yields excellent results when used on processing centers, cutting processing times by about 80 percent.

The **EXKA technique** is particularly recommended for high-quality furniture and lightweight panels (e.g. aluminum honeycomb panels) with extremely thin cover layers. In this process, highly viscous plastics are applied to workpiece edges on processing centers or injected into a honeycomb panel during edge extrusion, and then profiled with a cutter. The edges produced are complete and continuous but have no butt or glue joint.

HOMAG will present creative solutions for mounting technology as well in Hanover. HOMAG has been working with Rheinau-based system supplier Zimmer Kunststoff GmbH to develop a dowel with a drilling diameter of just 8.5 mm that is anchored by purely mechanical means, yet withstands removal forces up to 700 N. The dowel is splayed in a blind hole in the bottom cover panel. At the same time, the slotted portion of the dowel splays under the top cover panel. The dowel is under tension in the hole in the top cover panel. This forms a joint between the top and bottom covering layers, which stabilizes the honeycomb panel. This simple assembly method is ideal for industrial production and can also be implemented automatically on CNC processing centers reliably and economically.

### **Highly variable edge design with print line**

Nowadays, edging operations often involve working with over 100 different decors, designs, and dimensions. HOMAG has risen to this challenge, and in Hanover will demonstrate the innovative **print** line technique, which is already being used with great success. In this process, neutral edge material is printed with an individual decor after it has been applied to the workpiece. With a feed speed of 20 m/min, workpieces on the **print** line system are cleaned and preprocessed, printed, dried, and finally dried again and painted in one cycle. The system is capable of printing edges up to a height of 64 mm. A colour management system ensures that colours and edge decors can be faithfully reproduced.

Compared with conventional edging technology, **print** line is considerably less expensive because only one edge type is used for production and edge decors pass through the process not as a physical flow of materials, but in the form of information. The significance of this advantage increases as the order grows smaller. Edges can also be printed with company logos

or individual motifs – for example in shopfitting or booth construction – which has been prohibitively expensive until now.

### **Efficient processing center for kitchen countertops**

HOMAG will showcase the BAZ 523, a highly versatile and powerful processing center for the most demanding specifications, equipped with variable clamping and unit technology. The system is designed for use in panel sizing of shaped parts and kitchen countertop connections. The processing center is used for edge banding and finish processing in batch size 1 operations with an enormous variety of decors and geometries. The gantry construction allows a fast feed speed with excellent accuracy. Work steps that previously had to be carried out by hand are also automated, so one employee can operate several machines.

The basic machine includes pre-alignment of the countertop by means of roller track and lateral stop, and is also equipped with a vacuum/gripper handling unit for workpiece infeed. An infeed area with trimming unit from below is available as an option. The innovative portal yokes with double-spindle technology is fitted with 2 x 18 slot tool changers, a gluing unit, a new, patented edge cassette system and a PU sealing unit to prevent moisture from penetrating the bottom surface of the countertop.

### **Complete edging for workpiece thickness 100 mm**

Until now, it has not been possible to completely edge workpieces with a thickness of 100 mm in a single pass. All that has now changed with HOMAG's KFL 620 edge banding machine: This machine performs all edging work steps quickly and reliably, even on thick workpieces. The two-sided system is designed for industrial use and its many possible uses include narrow surface closure of lightweight panels. And HOMAG's innovative technology is also available for smaller and midsized companies in the form of smaller systems and processing centers, so that

they too can reap the benefits of economical edging in lightweight design.

### **Custom production: economical solutions for all operation sizes**

The inexorable trend towards more and more exclusive products is increasingly affecting the products in smaller and midsize companies. Especially for this customer group, HOMAG presents **flex** line, an inexpensive cell concept for economical production of furniture parts in batch size 1. On a single-sided edge banding machine, workpieces that have been machined to precise dimensions and angles can be processed in various sizes. On the new, exceptionally user-friendly entry module **Quick** touch, processing steps are selected simply by activating graphical icons. With a capacity of 12 cycles/min, about 400 workpieces in batch size 1 can be processed in a production shift, depending on the dimensions of the workpieces.

The nesting technique was developed for use in single-order production, and is closely associated with this technique. HOMAG offers processing centers in all performance classes for this. A BOF 612 is a compact processing center with 2 independent trimming spindles, and has been specially developed for high-performance processing of complete unprocessed panels with the nesting technique. Since the two spindles each work independently on a separate bench, the capacity of the BOF 612 is equal to that of two machines. Parts can be loaded and unloaded without additional programming thanks to a patented portal feeder.

### **PRACTICE: Processing centers with innovative unit technology**

The expanded Venture series by HOMAG combines five-axis processing with edge banding. The series includes 18 different machine configurations to meet the needs of all operation sizes, output quantities and workpiece sizes. The ability to combine several work steps in one system is particularly beneficial for small and midsize companies, as it

represents considerable time savings compared with conventional production methods. All models in the series are equipped with a powerful main spindle with interpolating C-axis and drill heads of various performance classes. The patented Multi Processing Unit (MPU) is an extremely recent innovation - this combines drilling, sawing and routing without the need to change tools and can be pivoted through 360 degrees. The patented electronics interface is also integrated in the main spindle, enabling the use of a vast range of units and lending exceptional versatility to the processing centers.

The series can be equipped with five-axis technology so that front faces, drilling and trimming can be performed at various angles. For example, with the patented **FLEX5 unit** the angle can be set automatically via the HOMAG Group's standard programming system woodWOP 5.0. A Venture 16 with the patented **DRIVE5+ five-axis spindle** can also be provided for staircase construction. Another configuration variant in the Venture series is the new **EasyEdge gluing unit**. With this unit, edges can be applied automatically and in consistently high quality even to single workpieces and shaped parts without right angles, such as round tabletops. The integrated **TBA 330 feed system** can be used even by smaller operations to cut expensive operator costs without having to invest a lot of money in robots or automated workpiece handling systems. The feed unit can be mounted on the lateral flange of HOMAG's standard processing centers, and does not need a separate controller.

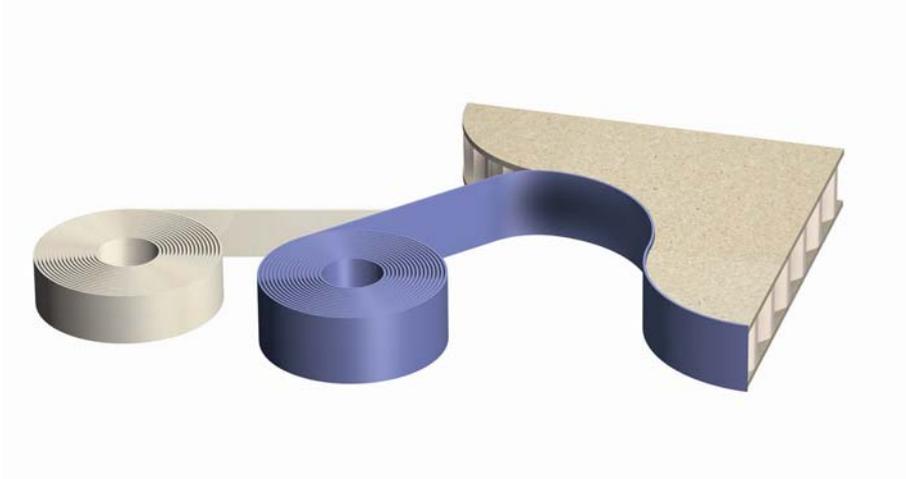
### **Inexpensive, high-performance edge banding machine**

In order to cut unit costs in the PRACTICE sector even further, HOMAG has developed the KAL 210 edge banding machine – a powerful system with an attractive cost-efficiency ratio. This machine can perform any task associated with edging a panel, from thin, roll materials to solid wood edges, with such accuracy that time-intensive manual postprocessing is

unnecessary.

Specifically, the KAL 210 is equipped with a very powerful jointing unit with a tool diameter of 125 mm, and two motors, one running in synchronous and the other in reverse rotation, to ensure a clean cut in the top and bottom of the panel. A hot melt gluing unit is used for applying glue to the edge, and the edge material is fed automatically from a magazine containing two rolls. The modern servo edge feed guarantees that the edge will be glued to the workpiece with pinpoint accuracy - with little waste and thrifty use of edge material.

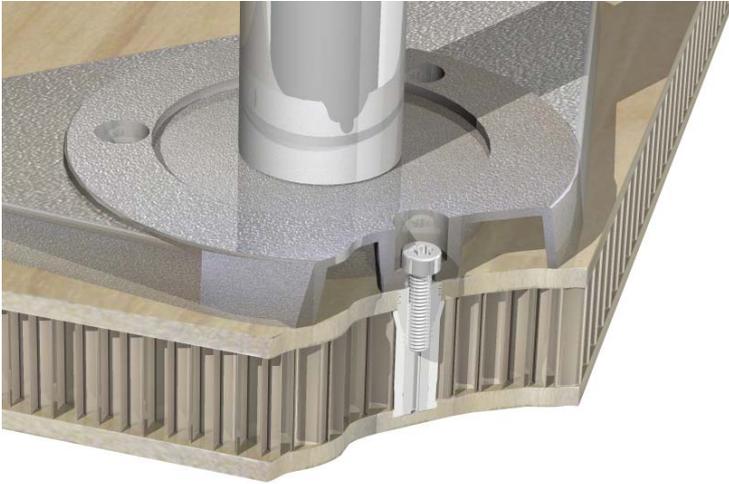
The four-motor profile trimming unit for trimming the top and bottom sides of the edge with chamfer or radius and for rounding the leading or trailing edge of the workpiece trims perfectly even at feed speeds up to 20 m/min. The edges are then smoothed with a profile scraper and a glue joint scraper removes the last traces of hot melt glue for a premium quality finish.



**Figure 1:**  
DoubleEdge process for lightweight panels



**Figure 2:**  
EXKA - edge extrusion on lightweight panels



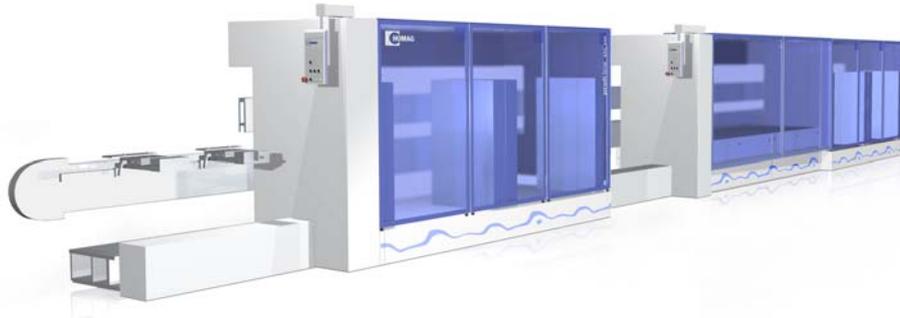
**Figure 3:**

New connection technology with plastic dowels from Zimmer Kunststoff GmbH



**Figure 4:**

print line - sample parts



**Figure 5:**  
New KFL 620 for tall workpieces



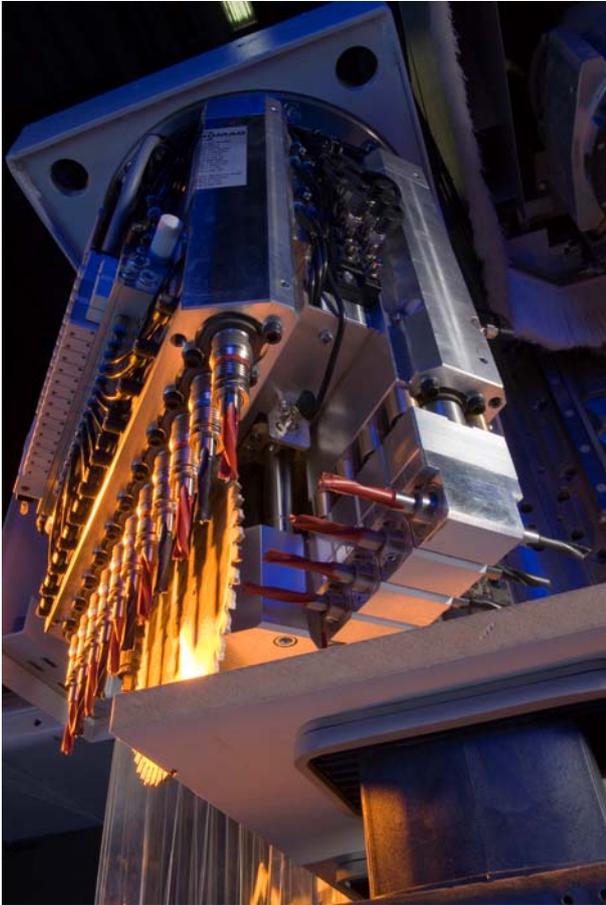
**Figure 6:**  
flex line - inexpensive solution for batch size 1



**Figure 7:**  
Processing center 612



**Figure 8:**  
Venture 21M - new Venture machine for the PRACTIVE sector



**Figure 9:**  
Multi Processing Unit (MPU) - pivots through 360 degrees



**Figure 10:**  
KAL 210 - new edge banding machine with attractive cost-efficiency ratio

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