

HOMAG Group at the LIGNA 2011

ecoPlus – Technology that pays off

Energy, time, materials and labour are all precious resources. Those who learn how to make the most of them can both enhance their productivity and save costs. This is where ecoPlus comes into its own: the new technology package from the HOMAG Group. ecoPlus encompasses a whole raft of innovations designed to permit energy savings of up to 30% and reduce operating costs. Because it helps to reduce carbon emissions, ecoPlus also has a part to play in saving the planet. Environmentally conscious customers can recognize machines equipped with this innovative resource-saving feature by the ecoPlus sign.

The enormous potential for savings achievable simply in terms of energy consumption becomes evident by taking an overall view. A company which opts for HOMAG Group solutions from the saw through the edge banding machine and processing centre to the sanding machine can make energy savings of **up to 30 %**. This is made possible by more than 100 individual measures which go to make up the **ecoPlus** concept. In total, these technologies make production substantially more profitable, faster and also easier on the environment. These are the factors that matter, and they sum up the HOMAG Group approach to sustainability.

Saving resources – enhancing productivity

As an innovative market leader, the HOMAG Group has always been a pacemaker for the market with its pioneering new developments. HOMAG Group products help contribute towards resource-saving production through enhanced plant and machine productivity, which in turn helps reduce the input of resources and consumption of energy. HOMAG also

places the focus firmly on the highly efficient deployment of machines and continuous optimization. With watchwords such as innovative control technology, intelligent standby systems, efficient extraction concepts and reduced compressed air supply, Homag is working towards ecological benefits such as reduced power consumption and more efficient working.

The more efficiently a company works with resources, the higher the added value its products can achieve. BARGSTEDT Handlingsysteme makes available logistical systems to its customers which help to optimize the entire material flow from delivery to the processing machine, ensuring efficient utilization of available resources.

BARGSTEDT plane storage system TLF 210 with ecoPlus:

- Up to 58 % energy savings due to intelligent standby system
- Up to 50 % compressed air savings due to ultrasound sensors
- Up to 14,000 € of savings due to optimum part handling process reliability (thin panel packages, weight measurement); operator intervention is not required

BRANDT also uses an array of **ecoPlus** technologies for optimized use of resources: Innovative drive systems optimize the performance to consumption ratio, while modern surface heating elements cut down the heating-up time required in the gluing unit. An intelligent control voltage management system also helps reduce energy consumption when work is interrupted or during breaks.

BRANDT Highflex edge banding machine 1880 with ecoPlus

- Up to 20 % increase in production output with the same energy input due to gap reduction
- Up to 40 % reduced air consumption due to use of a dual-circuit compressed air system

Panel sizing saws from HOLZMA offer particularly high performance and outstanding efficiency – starting right from their use of materials. Because every reject and all cutting waste equates to capital down the drain, HOLZMA decided to develop a range of custom-tailored technologies to ensure the careful and efficient processing of materials.

Smart production sequences start with the infeed

The world's most frequently sold optimization software Cut Rite from HOLZMA permits savings in hard cash. Using a HOLZMA optimization program can generate savings of up to 14,000 € per annum:

- Material savings of 5 %, corresponding to around 7,000 € per annum
- Time and labour cost savings due to automatic cutting plan generation: 7,200 € per annum
- Pressure beam height control and pre-positioning
- Simultaneous label printout
- Tick-tack system for angular plants

Saving energy on standby

One of the central components of the **ecoPlus** concept is the standby function. This switches the machine to an energy-saving standby mode – either automatically after a certain period or by pressing the standby button. All the relevant energy consuming systems then switch over to the hibernation mode. As soon as the standby mode is started, the machine immediately interrupts normal operation and energy consuming units are switched off. A signal automatically deactivates the extraction.

The HOMAG processing centre BMG 512 makes savings with ecoPlus:

- Up to 8160 kWh of energy savings a year through standby operation alone
- Up to 5.7 t fewer carbon emissions per year
- Up to 980 € of cost savings per year

ecoPlus calculator – for smart savers

The **ecoPlus** calculator allows precise advance calculation of the savings possible with **ecoPlus**. At the Ligna, the HOMAG Group will be demonstrating concrete calculation examples. The relevant framework conditions for determining energy costs are defined – for example electricity costs at 0.12 €/kWh (value depends on country and purchase quantity) or compressed air costs at 0.04 €/Nm³ when working at 6-7 bar. Because in practice this differs from one operation to the next, the calculation basis can be flexibly entered in the **ecoPlus** calculator (e.g. 1 or 2-shift operation).

Selective extraction technology

The greatest amount of energy required in woodworking applications is expended in the extraction of wood chips and dust, followed by the costs for compressed air. With the new **ecoPlus** system, the HOMAG Group has significantly reduced this energy consumption in its new machines and plants using process-dependent extraction concepts. In sizing and edge banding machines, the extraction ports can be controlled on a process-dependent basis with individual flaps in conjunction with a dual-pressure extraction system. As a result, its extraction output can be reduced by up to 30 % without compromising extraction quality.

Using the example of a KFL 326 edge banding machine from HOMAG, using selective extraction can achieve:

- Energy consumption savings of up to 4,000 € per annum
- Payback of the additional investment over 2-3 years

By selective guidance of the chip flow (internally extracted tools, known as the I system) the costs of chip extraction are reduced by up to 30%, meaning:

- Up to 3.8 million cubic metres lower extraction requirement per annum
- Up to 4,200 kWh p.a. or 47 % reduction in energy consumption
- Carbon emissions reduced by up to 3 t per annum

WEINMANN is also leading the field when it comes to efficient extraction with its new combination wall system WEK 100:

- Extraction costs reduced by 90 %
- 8,380 kWh savings potential due to smart extraction system control
- This corresponds to savings of around 1,000 € p.a. and potential for 5.9 tons of carbon emission savings

Exemplary extraction technology: BÜTFERING

Selective workpiece width-controlled machine extraction used in wide-belt sanding machines permits savings of up to 33% in terms of extraction volume. By controlling the integrated extraction flaps, the existing extraction output is selectively directed to the relevant areas of the machine in which sanding is taking place.

An air jet belt cleaning device integrated as standard in the dust hood reduces the required extraction volume by around 40%. The adjustable air jet belt cleaning device cleans the sanding belts directly at the outfeed of the sanding area.

The compressed air used is regulated in several stages, allowing consumption optimization in line with the requirements of the relevant sanding assignment. This permits compressed air savings of up to 80% to be made.

At your service: Energy efficiency another way

Energy efficiency can also work the other way around – by producing more without increasing consumption. Over recent years, productivity in HOMAG Group machines has risen on average by 25%. The machines produce more in the same time period, and so use less energy per workpiece. The HOMAG Group also offers a worldwide service, remote diagnosis by means of **TeleServiceNet** and diagnostic software by the name of wood**Scout**, which ensures maximum machine availability.

E-Service and **TeleServiceNet** additionally offer a machine-specific spare parts catalogue, quick support, up-to-date antivirus protection and download facility for software components.

SORB TECH – greater stability, maximum precision

The construction material SORB TECH from the HOMAG Group is designed to dampen vibrations up to 80% faster than conventional cast steel constructions. The benefit for customers: New quality standards in terms of surface quality and a substantially longer tool service life (up to a 20% increase). Alongside HOMAG, WEEKE and HOLZMA, the mineral mix is also used in the manufacture of BÜTFERING sanding machines, allowing even higher processing quality “without” the need for reworking, as well as faster acceleration and feed rates coupled with extreme precision. A machine frame manufactured from the steel fibre-reinforced mineral mix SORB TECH also reduces the primary energy input during manufacturing by a factor of three in comparison to steel.

SORB TECH is used in

- BÜTFERING wide-belt sanding machines 500 and SWT 900
- HOLZMA panel sizing saw series 5
- WEEKE CNC processing centre BMG 400
- HOMAG CNC processing centre BMG 500/600

Pressure off – consumption down

In many machines, compressed air is an issue of major importance – also when it comes to energy efficiency. There are several ways in which consumption can be tangibly reduced, with total possible annual savings in the four-figure Euro range.

HOMAG CNC processing centres with ecoPlus fluid grease lubrication provide exemplary savings:

- Up to 67,200 Nm³ less compressed air consumption per annum
- 100 % compressed air savings compared to oil and air lubrication
- Up to 5.64 t lower carbon emissions per annum

Efficient workpiece programming with HOMAG software

Programming and production without trial and error using HOMAG software modules saves time, cuts down on material used for testing and prevents rejects. A glance at the LED display permits fast setting and resetting with time savings of up to 70 %, reducing costly downtimes. This is done with the aid of software modules which monitor the machine – preventing collisions and quickly detecting, localizing and remedying faults.

Technology working for the common good

ecoPlus provides impressive proof that performance and economy make perfect partners. These are technologies that make intelligent use of energy – this is our driving force and the basis from which we set the standard in the industry for even greater efficiency and growing potential for savings. By following this precept, **ecoPlus** is kind to both the environment and the budget. This is the foundation stone on which the HOMAG Group is building good, solid perspectives for today, for tomorrow and for the future.

The more than 100 different measures for improving efficiency with **ecoPlus** can be broken down into four scientifically defined fields of action: technologies to increase process stability, increase the energy and resource efficiency of production processes, create self-contained cycles in process chains and take care of loss-free infrastructure operation of production plants. **ecoPlus** allows users to now make savings as a standard feature – hand in hand with improved performance.

Photo material provided by: HOMAG Group AG



Fig. 1:
The **ecoPlus** button



Fig. 2:
SORB TECH machine frame

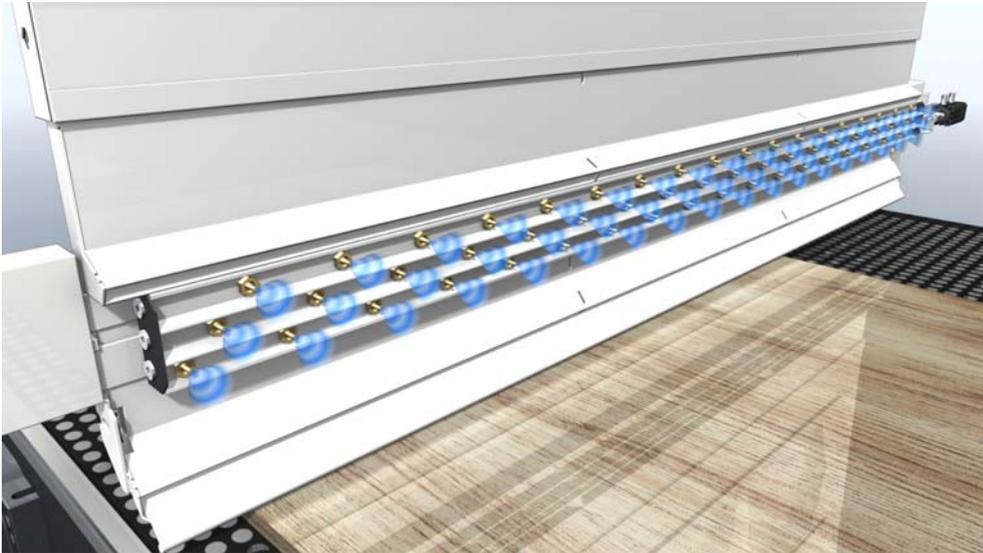


Fig. 3:
BÜTFERING belt air jet cleaning



Fig. 4:
Intelligent logistics for efficient material flow in BARGSTEDT handling systems

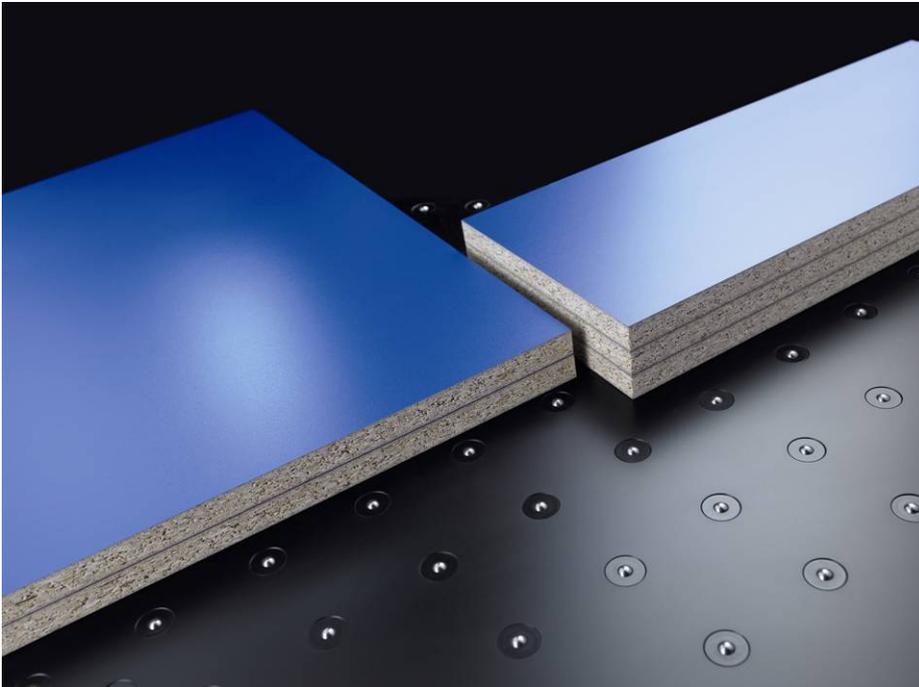


Fig. 5:

Intelligent air cushion table with load-dependent control by HOLZMA

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