

# Enabling saws to respond interactively to the operator.

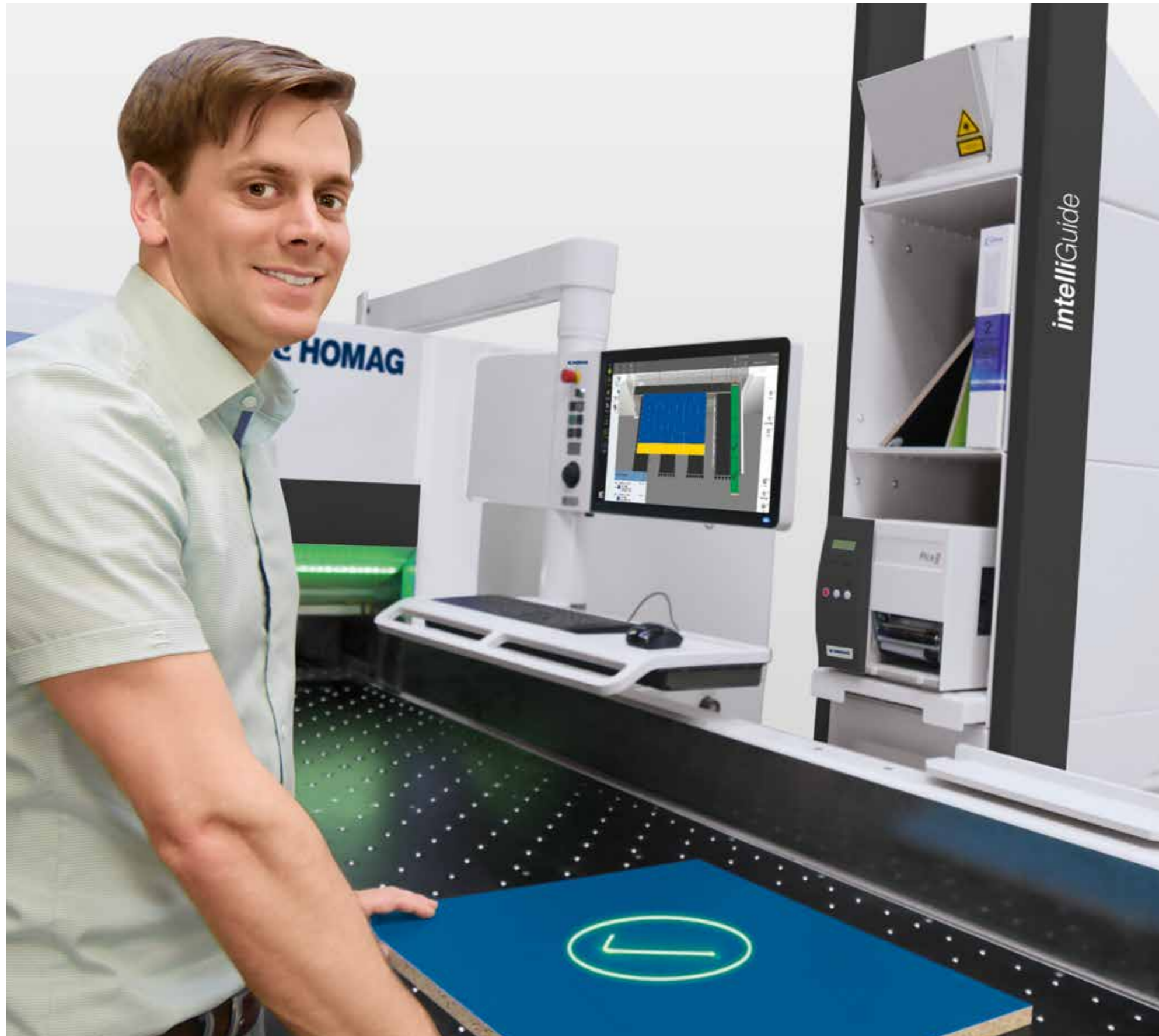
**HE HOMAG**

**intelliGuide**

Operator assistance system

**YOUR SOLUTION**





## intelliGuide – for full control over cutting

intelliGuide is the first assistance system in the history of panel dividing technology that enables saws to respond to the actions of the machine operator in an intelligent and flexible manner. This means that you have full control over cutting and benefit from ideal processes. intelliGuide has a modular structure. It becomes more intelligent with each stage of expansion: from intelliGuide Classic to Advanced, right through to Premium.

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intelliGuide

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“Up until now, the saw determined the production sequence, expecting certain actions from the machine operator. We want to reverse this relationship. Our saws should react intelligently to the operator and guide them through processing in an optimal way.

intelliGuide embodies this approach in an implementation that is unbeatably effective and unique worldwide. Thanks to continuous further developments, intelliGuide has also established itself as an optimal tool for training employees. It’s simple and intuitive to operate, setting new standards in human-machine interaction.”

**Jörg Hamburger, Product Manager for Panel Dividing, HOMAG**

## intelliGuide – more than just the sum of its parts

The intelliGuide operator assistance system is made up of many different components. Each individual component improves the processes in your production. Together, they convert the saw into an intelligent system that reacts interactively to the operator and the operator's actions.



### 1 Assistance graphic in CADmatic 5

- Guides the operator through the cutting process step by step via a 3D model on the monitor



### 2 LED strip at the cutting line

- Colored LED signals on the cutting line allow intuitive operation and a speedy and safe way of working
- Using the colored LED elements, machine operators can immediately see if a part has been fully processed, needs to be cut again or can be disposed of as waste
- Based on which LEDs are lit up, the operator can determine whether the workpiece being processed meets the required specifications



### 3 Camera system

- The camera delivers images from the front machine table and these are evaluated on an ongoing basis
- Hence the saw can always see and know which part or strip the operator is inserting and in which alignment
- This allows the machine to react intelligently to the operator's actions for the first time



### 4 Illumination

- Enhances safety and quality by ensuring the workplace and workpieces are evenly lit
- Improves the appearance of the workplace and makes it even more ergonomic



### 5 Laser projection system

Displays self-explanatory pictograms on the workpiece – with clear handling instructions for the operator, for example for depositing parts. Direction and rotation arrows are projected onto the workpiece itself.



### The benefits of intelliGuide

- Systematic means of avoiding errors
- Quick and easy processes: Operator and saw work in tandem and do not slow each other down
- The machine is intuitive to operate thanks to colored LED signals: The operator rarely has to look at the monitor, which allows the cutting pattern to be processed in a concentrated manner
- Fluid, ergonomic and safe processes for efficient working: Operators can be changed seamlessly at any time

### intelliGuide Tower

The number of technical components increases with each stage of expansion. To make sure that all parts can be accommodated, intelliGuide Tower is now included in intelliGuide Advanced. It is positioned directly next to the monitor as standard, thus fitting ergonomically into the working area of the machine operator. Its most important functions and features:

- A lighting system illuminates the workstation, enhances it, improves the ergonomics and thus increases the reliability of the quality overall

- The Tower provides additional storage areas in the working area, which improves the ergonomics even further
- There is also a practical compressed air connection
- The Tower has space for a label printer
- The camera is installed in the upper area of the Tower
- A laser projection unit is integrated from intelliGuide Premium

### Good to know

The intelliGuide operator assistance system is available...

- for all SAWTEQ B-130 and B-200 saws, in the "Classic" version only
- for the SAWTEQ B-300, B-400 and B-500 saws with and without lifting table, in the cutting lengths 3200, 3800, 4300 and 5600 mm



## The foundation – the CADmatic 5 assistance graphic

The innovative assistance graphic of the CADmatic 5 saw control system is the key to a new form of human/machine interaction. This is ensured by the consistent orientation of the software to the operator instead of to the technical processes.



### Innovative assistance graphic

New features of the CADmatic 5 assistance graphic are firstly that it concentrates on what is important and secondly, the consistent user orientation. The focus is on easily understandable handling instructions instead of technical information and machine data. The assistance graphic uses a 3D model of the saw to show the machine operator what he has to do next. Compared to the previous process graphic that visualized all the work steps of the saw (and can still be called up if required), this new graphic represents a 180-degree change in perspective!



## intelliGuide Classic

Work more quickly, easily, ergonomically and intuitively: these basic ideas were the inspiration for intelliGuide from the very beginning. You benefit from this even with the basic module; it guides the operator through the process step by step – masterfully and highly efficiently.



### Here we go!

Whenever the LED strip lights up yellow, the saw is ready for new material. The operator inserts the panel in the saw precisely where it is lit up.



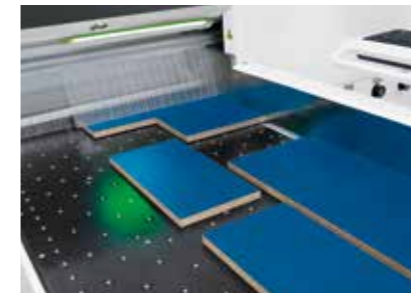
### The panel is being processed

If the LED strip lights up white/orange, the operator knows that waste parts are about to come out of the saw and will have to be disposed of.



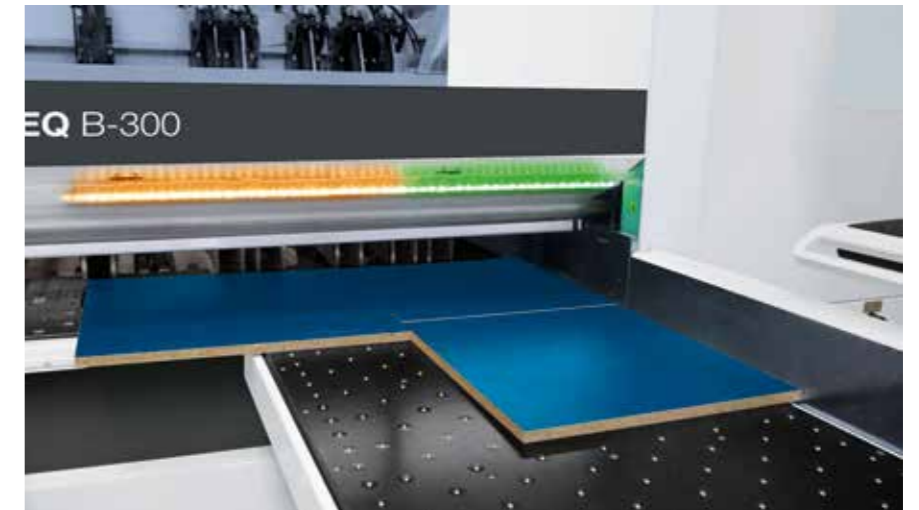
### Onwards to the next cut

The chaser lights indicate the direction in which the part is to be moved. The stationary line of lights shows exactly where the part must be positioned. Its length corresponds exactly to the width of the workpiece to be inserted.



### Finished

As soon as the LED strip at any point along the cutting line lights up green, the operator knows that there is a finished part that is ready for destacking.



### Multitasking?

But of course: with intelliGuide you always have full control, even when it's rush-hour at the cutting line. For example, when working with the Power Concept. Even when two strips are being cut to length simultaneously, the LED light shows each work step for each strip and each part clearly and definitively.

Here, for example, with a yellow LED strip on the left-hand side – this signals that a part is leaving the saw at this point and this part needs to be processed again. At the same time, the green LED strip on the right signals that there is a finished part here.



## IntelliGuide Advanced

IntelliGuide Advanced raises the interaction between human and machine to a new level! Now, not only does the operator respond to the handling instructions from the saw, the saw also reacts to the operator's actions. This is all made possible by an additional camera system.

### Camera

- With the help of the camera, IntelliGuide detects strips or parts to be processed and sees how they are aligned
- For example, if the operator inserts a part in the saw in an incorrect alignment, the cut is not executed. Instead, the operator is prompted to turn the workpiece. Repeated production runs are therefore a thing of the past
- If, for example, the operator inserts a workpiece that is not scheduled until later according to the cutting pattern, IntelliGuide reacts flexibly to the change in plan without any intervention by the operator. If no further action is necessary, the saw starts working after brief confirmation. Otherwise, IntelliGuide provides the operator with feedback and instructions



### Interactive LED strip

With IntelliGuide Advanced and Premium, the LED strip gives the operator additional handling instructions on the fly. This is possible thanks to up-to-date camera analyses.

**Image 1:** The yellow flashing LED strip prompts the operator to insert the workpiece. He inserts the desired workpiece correctly. The workpiece approaches the cutting line and the flashing LED strip turns green.

**Image 2:** The yellow flashing LED strip prompts the operator to insert the workpiece. He inserts an incorrect or incorrectly aligned workpiece. The workpiece approaches the cutting line and the LED strip turns red.

**Image 3:** As soon as the operator feeds the correct and correctly aligned workpiece to the cutting line, the LED strip turns green.



## IntelliGuide Premium

IntelliGuide Premium works with innovative laser projections. These support the operator with additional instructions directly on the workpieces or in the working area – simple and impressive. All handling instructions and information are shown clearly visibly in the range of vision for processing. This means that errors due to misunderstandings or lack of attention are almost completely excluded.

### Self-explanatory pictograms

Depending on the progress of processing, the workpiece selection and workpiece alignment, the user sees what he has to do next. IntelliGuide projects the pictograms into the working area of the machine operator. This means that a symbol appears precisely when the employee needs the information – and it is projected onto the workpiece until the action has been performed correctly. The pictogram follows the workpiece and can even be seen when the operator changes the position of the part.

### The most important pictograms at a glance:



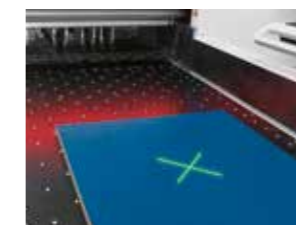
A single insertion arrow indicates how the workpiece should be positioned in the saw. It can also be seen on parts for automatic offcut return. The operator has to insert these in the saw again in the direction of the arrow. If the single insertion arrow appears on multiple strips at the same time, these strips should be placed on top of one another and processed as a book.



If multiple strips are to be fed in side by side simultaneously (Power Concept), the operator deposits these strips from right to left in ascending order. So, first the strip with the single insertion arrow, then the strip with the double arrow, and then – where applicable – the strip with the triple arrow.



Indicates waste parts.



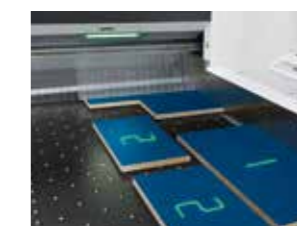
This appears when the operator inserts an incorrect workpiece.



The operator places the parts marked with this symbol directly in the manual offcut store.



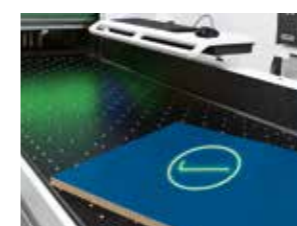
Rotation arrows on a workpiece show the required direction of rotation – until the alignment is correct.



If destacking locations have been predefined, numbers appear on the finished workpieces. These correspond to a pallet number. The operator simply destacks the part to the corresponding pallet.



This symbol indicates that the part marked needs a bevel cut. The operator must feed it to the module45 bevel cut unit.



This symbol indicates that everything has been completed. The workpiece is finished.

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