

# OERTLI



## window news

**OERTLI as a partner:**

**from the idea to the finished window**

**FENSTERBAU  
FRONTALE**

March, 21-24 18  
Nuremberg  
Hall 8 - 404



**Manufacturing windows not only demands ingenuity and craftsmanship, it also involves complex mechanical processes. As a tool partner, OERTLI is familiar with window systems worldwide – from Europe, the USA or China. As your partner, OERTLI is by your side every step of the way, right up to the finished window – from the idea, planing, profiling and drilling through to initial use.**

### **Planing: perfect surface from the start**

Anyone who uses a plane knows that tears can be produced in wood with knots and an irregular surface. And, because the upper and lower surfaces are not machined after planing, the surface must be perfect in the first pass. To avoid tears, OERTLI combines a Micronex planing head with a finish planing head: while the Micronex planing head with serrated profile breaks the chip, the finish planing head simultaneously produces a smooth surface that does not require any remachining.

### **Profiling: where quality and performance are decisive**

The next machining step, profiling, is the core process of window manufacture. This is where the quality of the window and productivity are decisive. Cutting speeds of 120 m/s were inconceivable for a long time. The CAT clamping system makes it possible to achieve these speeds and increase productivity by about 40 per cent.

Find out more in „CAT: sharp, fast ...“

### **Drilling: fast and clean**

Drilling dowel holes in profiled components is easy. It becomes time-consuming if the tool does not fit. Tears and repetitive retraction for chip clearance slow down the process and make remachining necessary. We designed the Turbex Sprint solid carbide dowel drill so that a single drilling operation suffices for a clean, precisely positioned hole.

### **Every step of the way: to commissioning and beyond**

Once the machines and tools have been defined and delivered, they are commissioned. OERTLI accompanies initial running-in

of the tools to ensure that they function as previously planned with the customer. For the presentation and marketing of finished windows, OERTLI offers 3D graphics to show end customers all window functions in detail. Find out more in “No matter how ...”

Even long after a project has been completed, we continue to remain your contact partner: with personal advice and a reliable tool service.

What step of your production process would you like to optimise? We look forward to welcoming you to our stand at Frontale in Nuremberg.

Antoine Vernez, Management



## CAT: sharp, fast and easy to mount



A tool that is as good as its cutting edges. In the development of the high-performance line, OERTLI focused on the knife system. The new CAT knife system is designed for high speeds and perfect cutting quality.  
(by Thomas Oertli, management business development)

### ...even faster

The CAT knife system allows the possibilities of CNC machines to be fully exploited. Thanks to a specially developed clamping system, CAT systems are approved for cutting speeds of up to 120 m/s. For a cutter with a diameter of 180 mm, this means speeds of 12,750 rpm. The high rotational speeds mean that more knives are in use per minute. Taking a cutter with two knives as an example, rotating at a speed of 12,750 rpm, this results in 25,500 knives per minute. In comparison, for tools with speeds of 9,000 rpm, which are only approved for a cutting speed of 85 m/s, this

is only 18,000 knives per minute. CAT will therefore increase cutting performance by up to 40%. The speed, i.e. the number of knives in use per minute, essentially determines the cutting performance and achievable feed rate.

### ...easier

Fast and easy handling without mistakes: a customer requirement that OERTLI meets with the new CAT knife system. No loose parts, easy access irrespective of the axis angle and secure, positive positioning make CAT the most reliable and easy-to-use knife system in the industry.

### ...longer

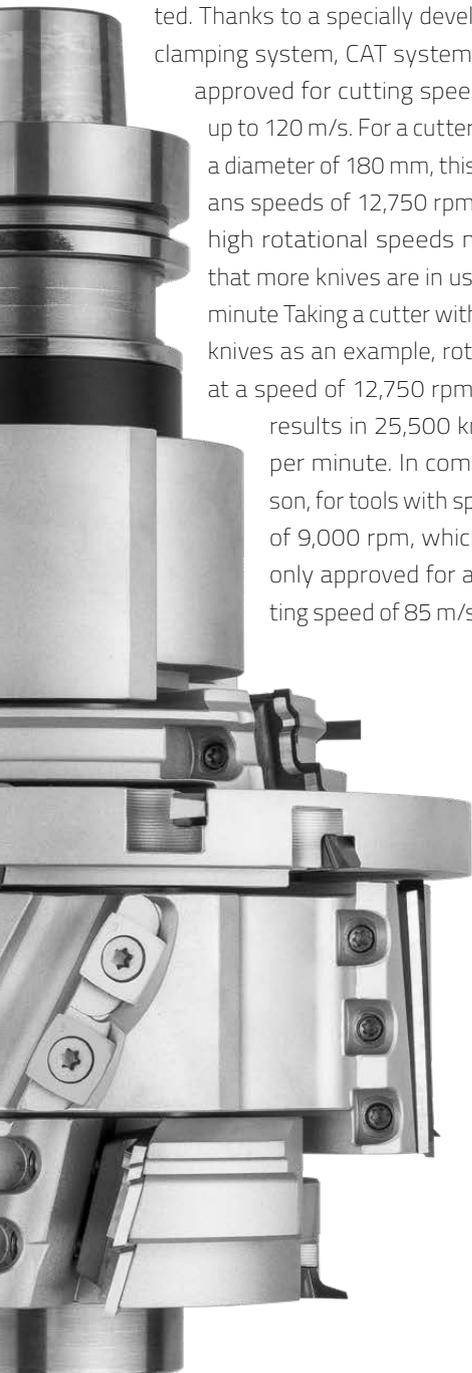
The cutting quality – the result on the wood surface – is determined by the knife geometry, sharpness of the cutting edges and the carbide quality. OERTLI has tested diverse knife qualities and selected three for the CAT knife system. For machining softwood, OERTLI uses a particularly tough knife. For machining soft and hardwood, a knife of a harder quality is suitable. Our premium knife has an extremely long service life and is suitable for all types of wood: finely polished by lapping and additionally protected against wear by a hard coating, this knife not only achieves exceptional results on wood surfaces, but also has a long service life.

### ...cleaner

With respect to the knife geometry, OERTLI distinguishes between end grain working and longitudinal working. Pre-splitting and splintering can cause unsightly tears in longitudinal working. For this reason, OERTLI uses a chip breaker – exactly profiled to match the contour – directly below the cutting edge, which effectively breaks the chip and prevents pre-splitting, thus producing a clean and smooth wood surface. A chip breaker is not recommended for end grain wood as pre-splitting does not occur and a chip breaker would hinder free chip flow. This is why OERTLI dispenses with a chip breaker for end grain wood cutting. A low cutting pressure relieves the knife and also extends the service life.

### ...and more economical

All CAT profile knives are fully resharpenable. Depending on the application and use, the minimal change in contour as a result of resharpening should be taken into account. CAT knives can be resharpened several times up to about 0.2 mm, which also makes the use of CAT economically attractive.



Find our CAT animation on youtube here



## Manufacturing windows in Jamaica



The most technologically advanced window manufacturer in the Caribbean changes from simple machines to CNC production. In cooperation with OERTLI, the window manufacturer develops diverse types of windows and tailors them to automatic production. (by Friedrich Carsten, Key Account Manager)

In the middle of Kingston's industrial area is a window factory producing windows on 6000 square metres. Beaches lined by reggae, rain-forest and reef – this is what Jamaica is famous for. Nonetheless, the window manufacturer Dougall – with 40 employees – has been successfully producing windows for a number of years. Not just plain standard windows, but 10-metre-wide sliding doors, round pivoting windows, as well as its own louvre shutters designed in-house. All in the traditional colonial style, as popular with holiday home owners on the island.

In 1984, Alex Dougall founded „Dougall Flooring“, which was originally a parquet specialist. The company made finished boards from raw wood blocks from Brazil. Dougall initially started to produce windows and doors twelve years ago. In the beginning, simple windows were manufactured on simple machines using only a few tools; only one workplace was provided for each machining operation.

Countless customer requirements – from round windows to front doors – were met at the time by the window manufacturer with a single window system. However, over time, enquiries became too numerous and diverse, meaning that production could no longer take place in this way. In 2016, the owner of the company Alex Dougall decided to modernise the factory and change to automated CNC production in order to produce more efficiently. The declared aim of Dougall is not only to supply the entire Caribbean, but to export to the USA.

### Systematic change

„The data volume associated with the enquiry was huge,“ says Carsten Friedrich, window specialist at OERTLI Werkzeuge AG. The different types of windows were often individual items intended for simple machining on single machines. The change to CNC manufacturing had to take place systemati-

cally. As part of a preliminary project, Dougall instructed the window specialist Friedrich to evaluate its previous products and adapt them to the new production technology.

The services included in this kind of OERTLI preliminary project cover definition, development and optimisation of the new products, irrespective of where the customer ultimately orders the tools. The finished machining concept enables customers to obtain offers from any tool manufacturer.

„Based on the existing profiles, we began to develop a system,“ says Friedrich. All of the data on the produced products was collected and broken down into the different profiles. Together with Dougall employees, Friedrich developed a new structure using a bottom-up approach. All window systems should be combinable and connectable. „How production would take place later was always at the back of our minds. We created a system that was exactly tailored to the machine and programming requirements,“ explains the window specialist. Friedrich spent several weeks on-site in Kingston measuring existing profiles, producing new CAD drawings and preparing a machining concept that would enable Dougall to benefit from the highest possible flexibility, including in automated manufacturing.

### Valuable specialised knowledge and dedication

A Homag BMB 925 processing centre with two processing tables was the preferred choice. And the tools? „We had already used OERTLI tools in the past and were very satisfied with their quality. However, decisive for us was the valuable specialised knowledge and dedication we experienced



in the preliminary project," says Alex Dougall, looking back. For Dougall, reliable support and direct contact partners are important when choosing suppliers. And the same applies to tools which, despite the hard and dense wood – mainly processed are Jatoba, Cumaru

and Jequitiba – are built to last. In order to increase the abrasion resistance, both the knife geometry and the carbide quality were specifically designed for the abrasive tropical wood. Dougall uses a splitting tool concept to enable the cutting of a wide range of profiles.

The machine is still in Schopfloch, where it will be set up by Homag. The machine will be in production in Kingston later this year. 26 window and door systems consisting of 1,200 individual profiles must initially be programmed and tested.

## No matter how you look at it: the future in window advice



Already long-established in architecture: the use of interactive 3D graphics to support customer advice. OERTLI has developed this technology for the visualisation of window systems and will be offering its customers the technology in the future to provide optimal window advice. Tip Top Fenster in Austria has been using interactive 3D graphics for a long time and is delighted. (by Thomas Malin, product manager)

Different information is needed for optimal window advice: the placement of seals, thickness of frames, shape and function of the windows, visualisation of the final window as realistically as possible, as well as numerous other technical and aesthetic features. Until now, these could usually only be presented in the form of sample windows. However, the production of such samples is laborious and involves considerable cost. In addition, these samples wear quickly in daily use.

An attractive, simple and yet meaningful alternative is the use of electronic, interactive 3D graphics for the presentation of windows. Based on its own design data for window systems, OERTLI presents the windows in a three-dimen-

sional, interactive way: important details can be enlarged and presented as required by rotating these graphics into any angle. In addition, these electronic samples can be viewed quickly and easily on any laptop, tablet or PC.

Tip Top Fenster in Mühlbach (AT) has been using 3D graphics for about two years. „The advantages are consistent quality and fast use without the need for expensive photo shoots. All in all, a fantastic support," says the Managing Director of Tip Top Fenster, Andreas Rieder. „Electronic visualisation does not replace sample corners completely, but these are a valuable addition in the advisory process for the definition and selection of windows."

On the OERTLI exhibition stand at Frontale 2018, experts will demonstrate how 3D visualisation can be used for sales documentation and how this interactive data is obtained for specific window systems.



*Tip Top Fenster uses 3D graphics for its window systems for website presentation and in sales documents.*



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