evolution S

The worlds most efficient single lane tray sealer.
Capable of sealing in excess of 250 packs per minute.

pa

www. pal.co.uk

WELCOME TO THE evolutionS

Introducing our new tray sealer, the evolutionS

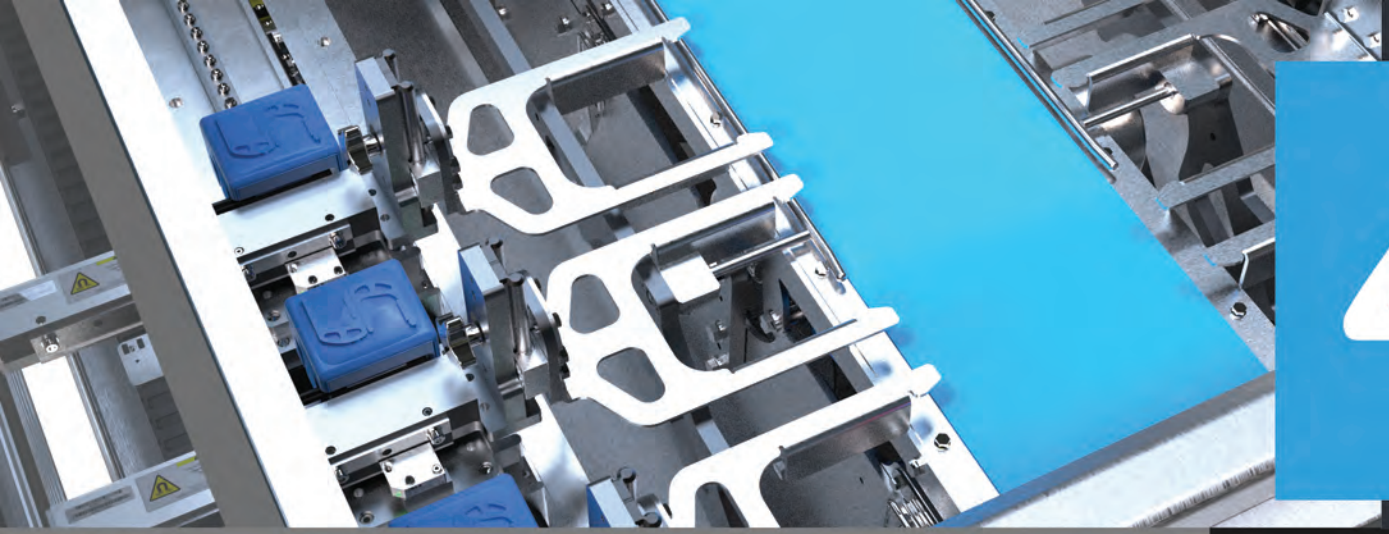
Four years in Research and Development working alongside food producers and manufacturers challenging industry limits we've managed to create a seismic shift. It's the most developed and tested machine ever developed by Packaging Automation. Until now engineering principles have limited tray sealing capabilities. But when Science meets Industry, anything is possible.

Able to reach speeds in excess of **250** packs per minute in a single lane format. The only thing limiting line output is the upstream process.

Using new Syncro Technologies the evolutionS optimises every operation required to seal a tray, accurately, reliably and efficiently. It improves pack stability through the moving and sealing phases, reducing tray and more importantly product damage.

Replacing existing twin lane machinery which take up factory or packhouse floor space. Simplifying the line process means removing the need for diverging, converging conveyors, multiple date coders and multiple tooling, it's a simple single lane system which will increase any packing line's performance.

Neil Ashton
Managing Director
packaging automation ltd



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4 years in development

- Capable of sealing in excess of 250ppm* in a single lane format
- No need for expensive converging conveyors
- One continuous motion ensures a constant stream of packs - this makes 'machine throughput cycles' redundant
- Precision control enables zero damage to delicate products and packaging
- Most powerful fully electric seal station gives consistently strong seal quality
- HMI integrated coder controls remove the need for seperate HMI's
- Perfect date coding possible even at full speed
- mlassist - An intuitive LED guidance system
- Auto adjusting operation - minimal operator input

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*ppm is dependant on product and tray size

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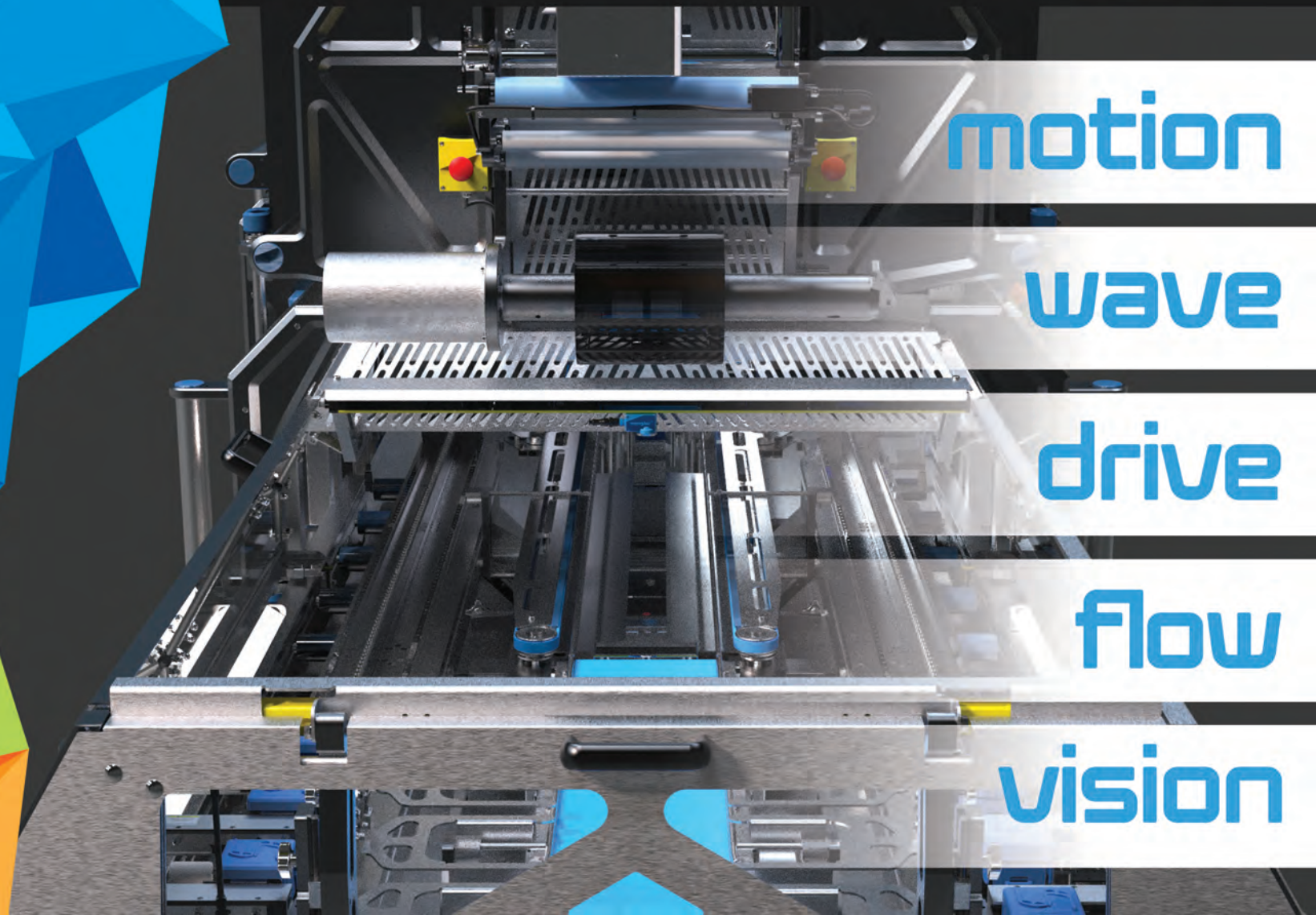
syncro technology



motion

wave

drive

flow

vision

innovating since 1963

syncromotion

The evolutionS utilises the latest in robotic technology and for this type of application this machine is a world first. Historically pack movement has required some sort of deceleration or pause to position the packs accurately and at higher speeds the pack positioning and accuracy is compromised, and ultimately this compromises reliability and overall machine performance.

With syncromotion the packs are not required to stop, in fact the packs are accelerated. syncromotion does completely the opposite to the current tray seal technology which seems counter intuitive, but we control the pack all the way through the movement profile and only when stationary do we release the pack.

PATENT PROTECTED DESIGN

syncrowave

To ensure true continuous controlled movement all tray sealers/ top web sealers which offer optimum flexibility, operate intermittently and this causes delays in the upstream process.
With **syncrowave** all elements of the moving phases are synchronised. A complete cycle of packs can be loaded and unloaded without affecting the overall output of the machine.

NEXT GENERATION ENGINEERING

syncrodrive

Transfer arms or fingers are curently used to transport packs into and out of most tray sealing machines. On our higher output machines the arms can be up to three metres in length making them heavy, cumbersome and difficult to store. And for those production environments where repeated tool changes are required for a variety of pack formats, this is a laborious and none value added task.

With **syncrodrive** all pack formats can be transported without the need for fingers or arms, no need to adjust the settings to accommodate different depth packs, and the speed of transfer is only limited by the product itself. **syncrodrive** can transport the packs three times faster than arm mechanisms whilst maintaining optimum accuracy.

SOMETIMES THE SIMPLEST **OF IDEAS ARE** MISSED

syncroflow

High speed feeding of the film is critical when date coding. The operating window to code accurately is limited by the intermittent start stop nature of tray sealing. This limit can restrict the overall performance and output of the machine.

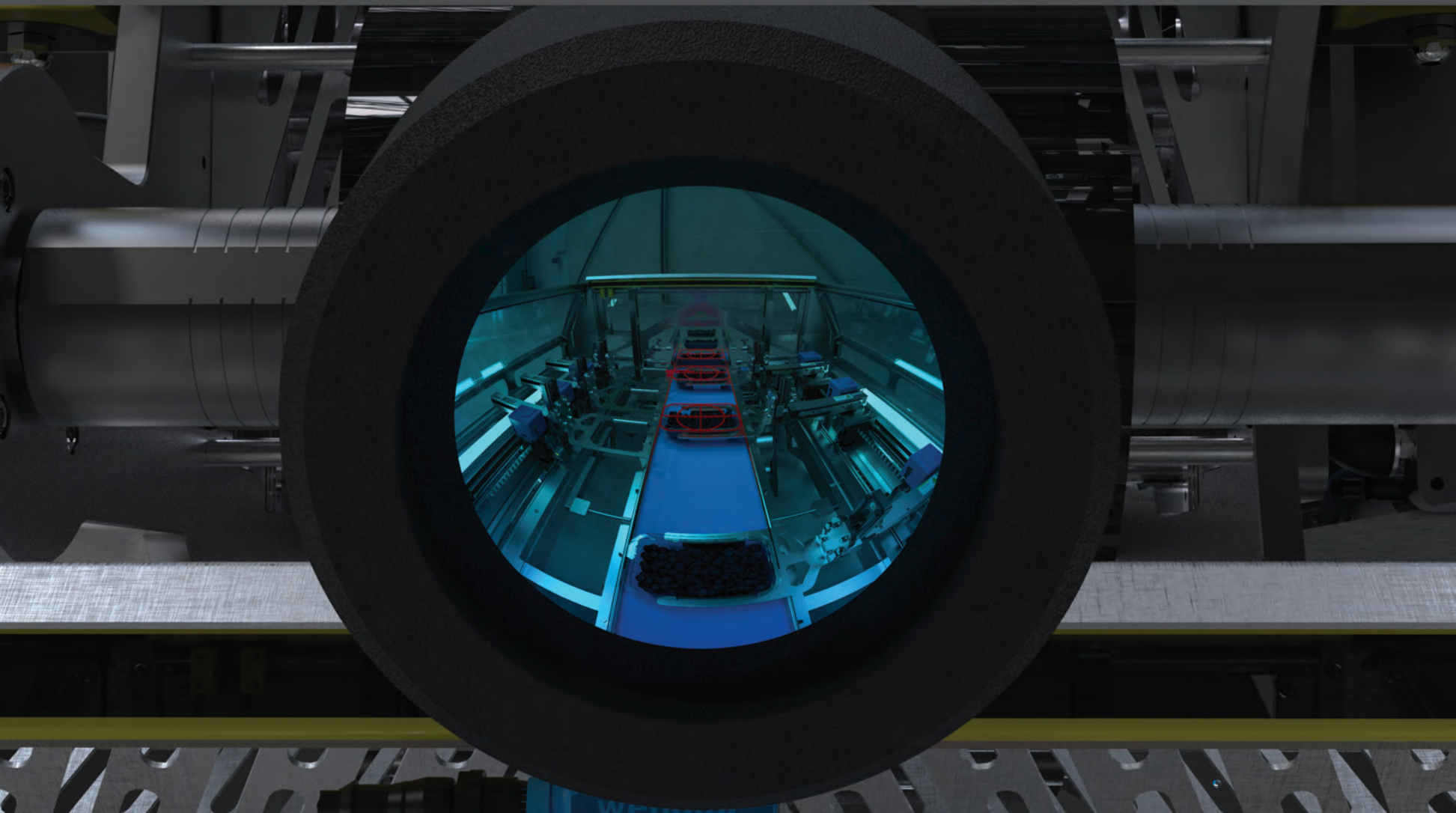
With **syncroflow** the film feed is slowed through the critical coding phase to ensure an accurate and consistent print and then feed at a much higher speed through the film feed replenishment phase.

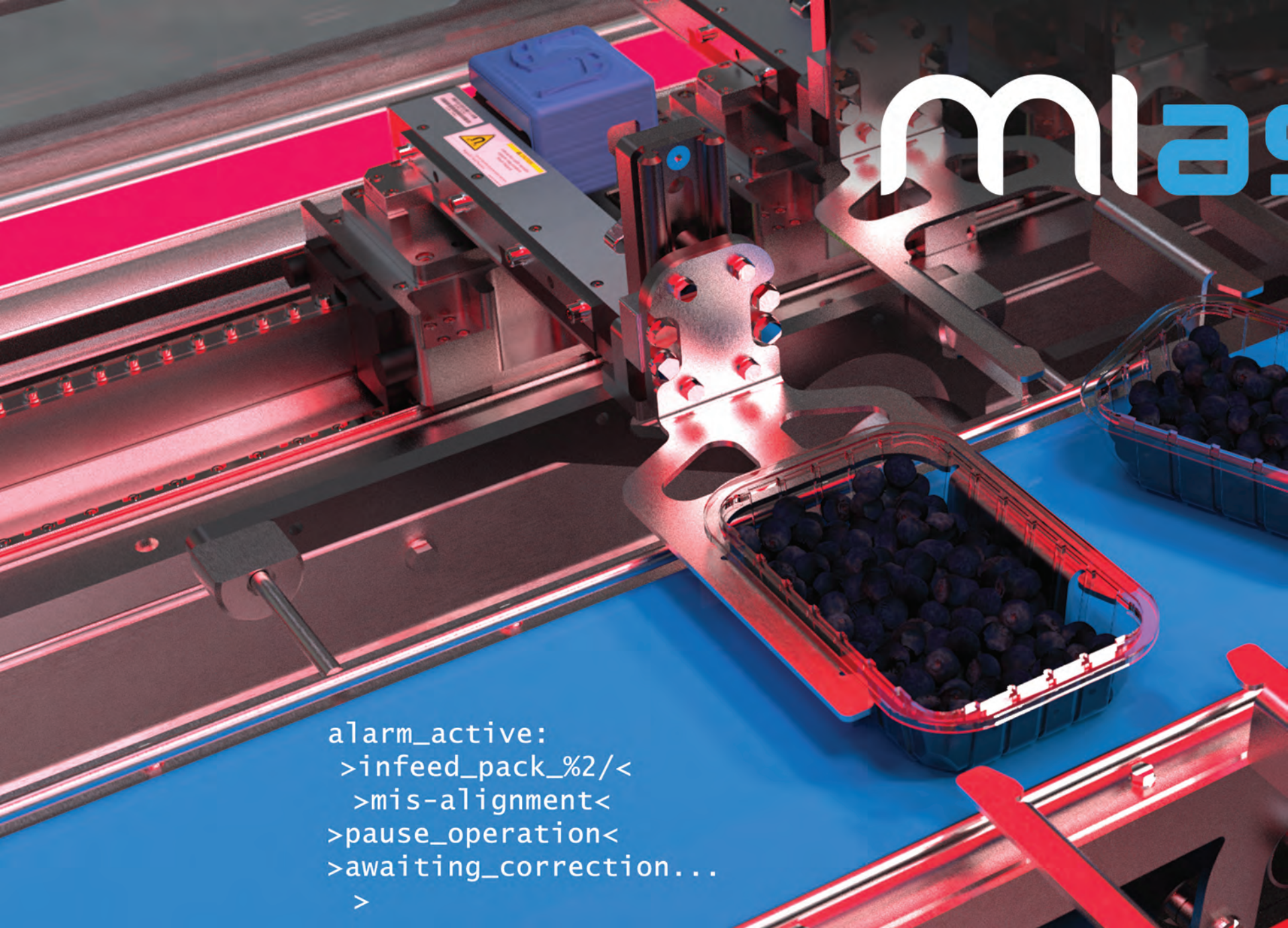
Perfect print every time - even at full speed

syncrovision

For the ultimate in precision control - there is **syncrovision**.

This is a highly sophisticated system which monitors the position of every pack and ensures that each one is in the correct position to be transported by the movers with zero damage to the pack.
If a misplaced pack enters the machine, **syncrovision** will immediately pause the production to avoid any costly errors.

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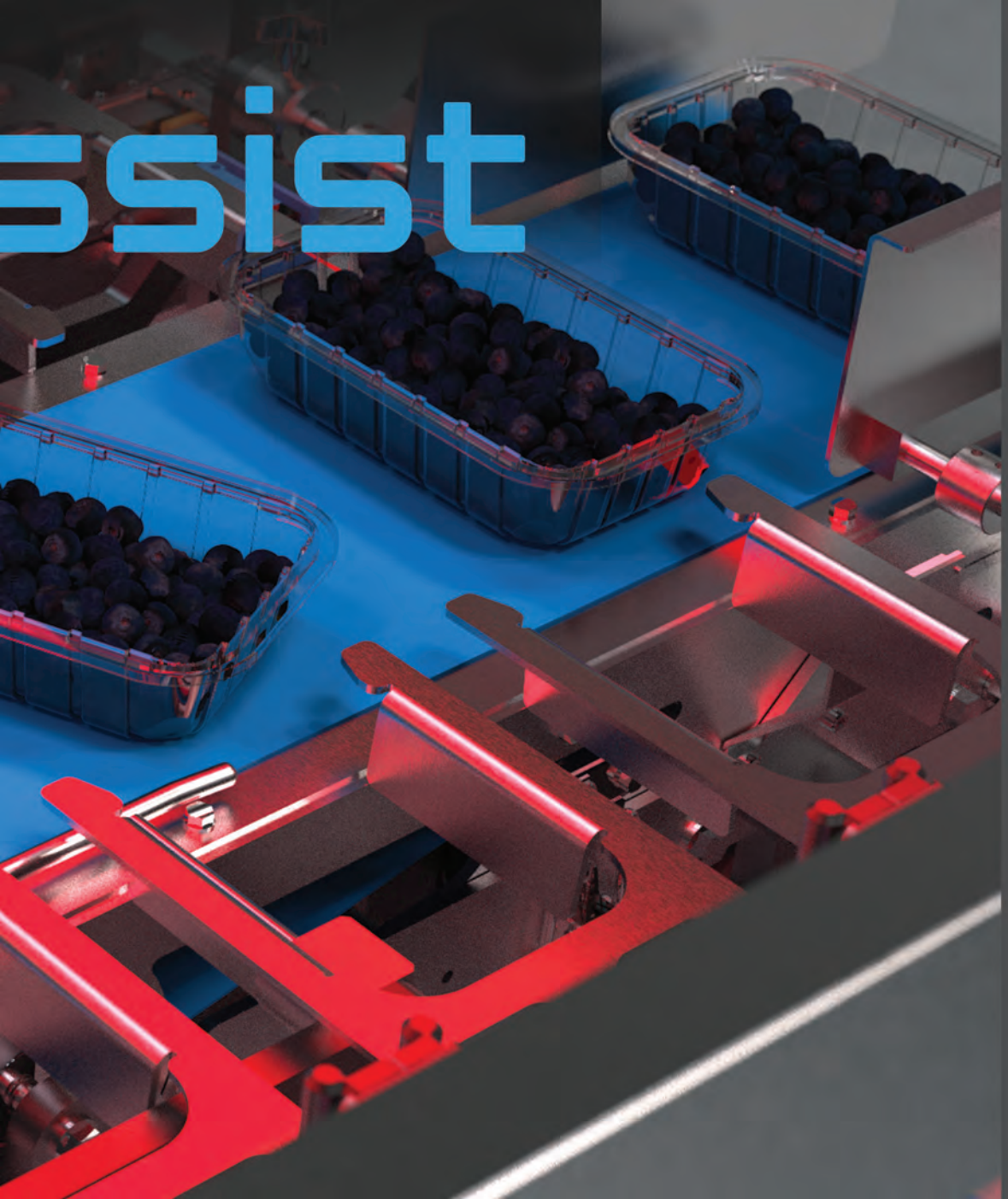

INTUITIVE OPERATION

MIassist is the new operating system for the **evolutionS** with clear operating visual signals and prompts.

The **evolutionS** does the thinking for you, the machine is always set to the optimum output possible. Using **MIassist** the machine intuitively adapts the rate of operation to suit the rate that the product is being fed, reducing bottlenecks, simplifying the operation and maximising the machine output.

To provide operator awarenes the **evolutionS** uses intelligent lighting. **MIassist** controls a sequence of lighting options which inform the line operator of the machine status. The complete machine is green when operating, yellow when idle awaiting product and red when stopped. If a specific area has failed or a safety guard has been broken then the machine will intelligently flash in the location of the fault. To help with machine maintenance or to illuminate an isolated area for tool changes the lights can be changed to Maintenance Mode, a bright white setting which aids visibility.

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mlassist

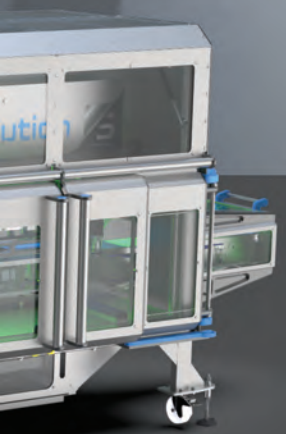
Intelligent visual guidance system

Red lighting indicating an issue within the infeed section of the machine.

Blue lighting means the machine is ready to be reset and production can then commence

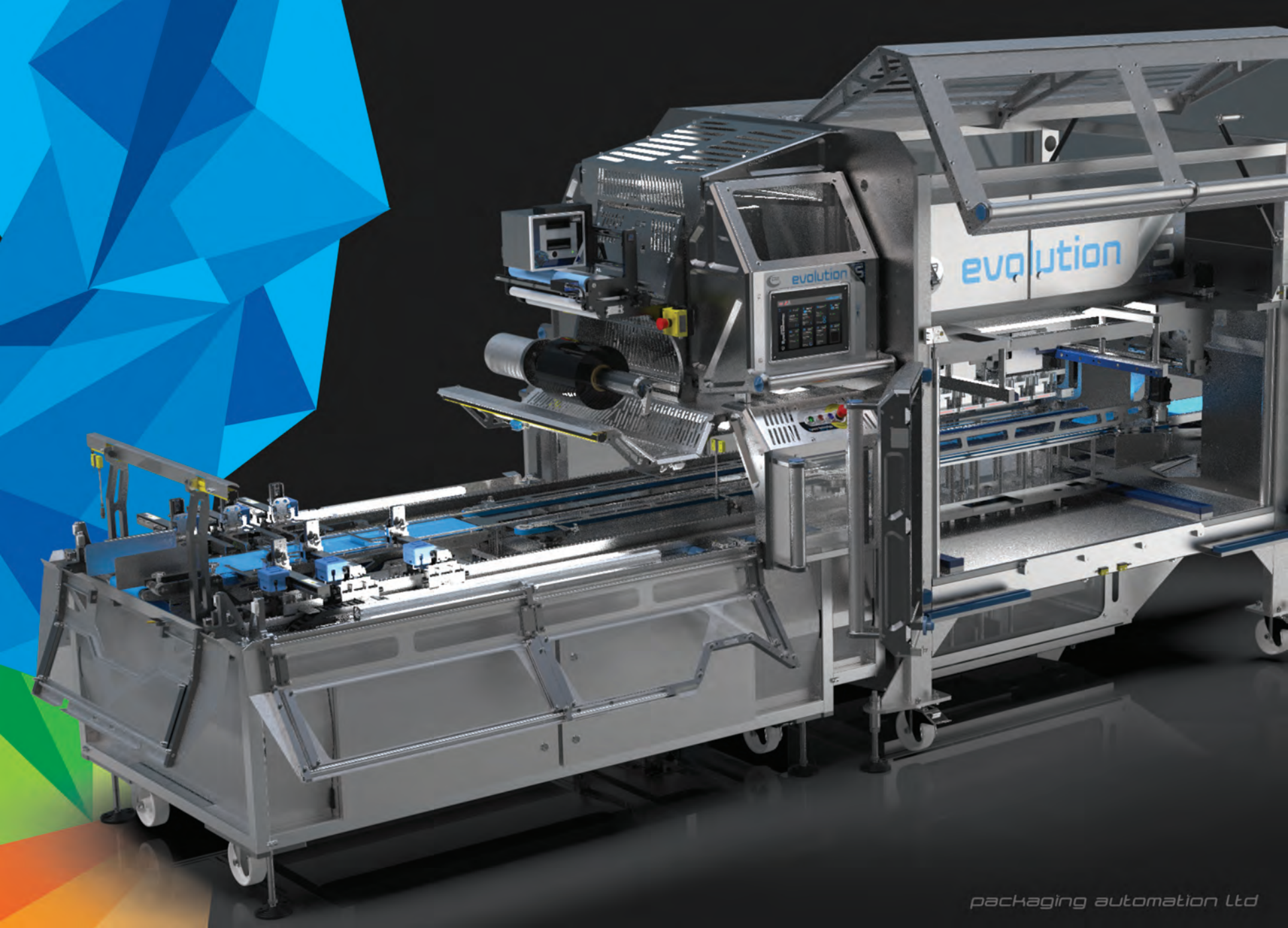
Yellow shows that the machine is waiting for an external piece of equipment, either upstream or downstream

When the evolutionS is running, all areas of the machine are illuminated green.



Once the required tooling has been installed, the recipe has been selected, and the coder set via our HMI screen - the operator presses START and the machine goes into automatic mode. Operator input is minimal.

The **evolutionS** constantly monitors the feed rate and adjusts all aspects of the machine. The speed is always adapting to match the incoming packs, this means that production is always running as efficient as possible, and the machine does not operate at full speed when it is not nesessary.



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LET THERE BE LIGHT

The evolutionS has been designed for ease of use during operation but also importantly for when cleaning and maintenance is required.
The use of premium clarity polycarbonate windows in all of the guards enables the operators and engineers to see exactly what is going on.

In addition to the intuitive lighting guidance system during production, there is also an option to select 'Maintenance' mode. This illuminates the whole machine in a bright white light, enhancing the visibility for carrying out tasks.

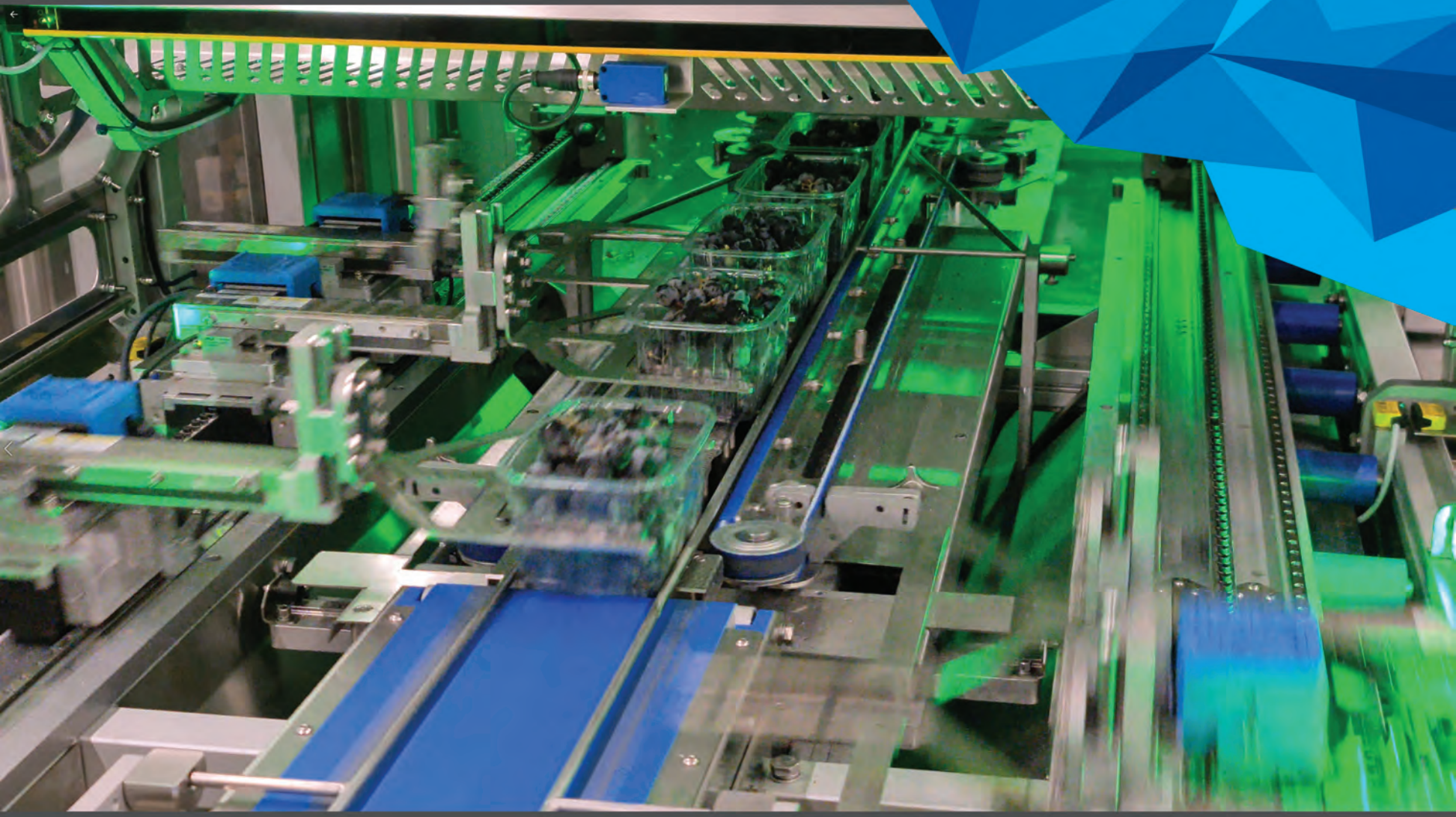
The guards that open above head height are gas-assisted to enable easy operation.
The front and back seal station guards are telescopic, meaning that you can simply open the centre doors if needed, but opening the full doors still uses the same opening space saving valuable factory floor area.

"The LED guidance system is making a huge difference in the time it takes our operators to identify reasons for stoppages - its invaluable"

So what does all this new technology achieve?

With all of our **syncro technology** implemented, we can now achieve output speeds never before seen in a single lane format. In excess of **250** ppm. There is no longer the need for costly twin lane feed conveyors or converging conveyors. We can reduce the amount of valuable floor space needed on your factory floor. Using our robotic technology we can reduce damage to product and ensure long reliable production runs with minimal input from the operators.

> **The evolutionS basically runs itself, freeing up our operators to focus on other tasks and we are consistently ahead on our production runs**



THE WORLDS FASTEST SINGLE LANE TRAY SEALER

evolutionS
Born from an obsession to develop and improve

Dave Woolrich
B.Eng(Hons) Mech.Eng
Head of R&D
packaging automation ltd

Design ambition

From the outset of this project our ambition was not only to achieve an immense increase in speed but also to improve machine reliability and pack stability when running at high speed. From our experience with high speed lines we knew that we were not going to be able to do this by further developing the traditional stepping conveyor and transfer arm arrangement the industry is so accustomed to, as we knew the resulting bottleneck needed to be removed entirely and replaced with a radical new concept.

It's a bold move to attempt something that has never been done before with such a high degree of engineering complexity, but we are now able to see the huge benefits that come along with the risk we have taken.

evolutionS undergoing rigorous on-site testing during development.

Design Ethos

The design ethos behind such a radical and complicated new platform always had to be to make everything modular. The machine comprises a series of simple modules that are easy to remove and replace, easy to maintain and assess and most importantly easy to understand. The benefit of this approach is that something that appears to be complicated is simplified into individual parts that make it easier for engineers to understand.

Development

From the point of design concept, what followed was a series of development leaps which were submitted to multiple stages of testing and redesign. Once proven and we were confident that we had a reliable core concept, we could start to design the state of the art equipment to encase this core.

The **evolutionS** has 26 axis of motion and is by far the most technically advanced machine we have ever produced.

Despite increasing pressures to launch the machine, extra time has been taken to ensure we are presenting a reliable, fully developed machine to the market.

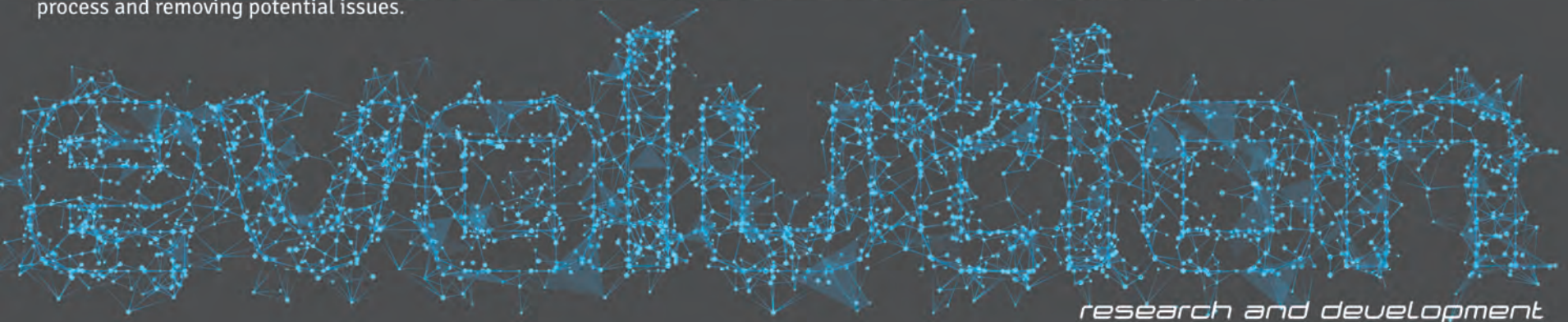
Ease of use

The importance of an easy to use interface is elevated when working with a machine that is unlike any other in the industry.

The machine's adaptive speed feature removes the need for operators or engineers to try and find the optimum settings for the line, whilst also minimising wear on components by reducing loads when running at lower speeds.

With traditional technology that uses transfer arms to handle packs, when switching between equivalent trays from different packaging manufacturers, the likelihood of errors and problems with achieving the precise set up required has been a big headache for many machinery users who use multiple sources for their packaging.

This design eliminates the need to change the machine setup when switching between equivalent packaging, vastly simplifying the process and removing potential issues.



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