



HYDROGEN FORCE SYSTEM



NEW PATENTED ZERO-JOINT TECHNOLOGY

New high-technology system to provide the perfect edge bonding **quality** at the best **efficiency**

Zero Joint Edge activation through a **hydrogen** flame produced from **Water** and **Electricity**

HFS SYSTEM

System Highlights

The edge activation through a **hydrogen** flame produced from **Water** and **Electricity** guarantees:



- ✓ Perfect edge bonding **quality** without the use of glue
- ✓ **No glue** line
- ✓ Highest resistance to **heat** and **humidity**
- ✓ Best-in-class Zero Joint Technology in **peel-off test**



- ✓ **Sustainable** Technology: energy from water and electricity
- ✓ Highest **Efficiency**: -70% Power Consumption, if compared to Air force System



- ✓ The **easiest** Zero Joint Technology to use
- ✓ Compatible with **all** energy-activated edges and **NO setting** needed depending on edge color.
- ✓ **Easy maintenance**, if compared to Laser Technology
- ✓ Optimized **safety** and control system



- ✓ Highest Flexibility: Glue / No Glue - **Batch One**
- ✓ Compatible with **all** energy-activated edges and **NO setting** needed depending on edge color



- ✓ Highest **Efficiency**: -70% Power Consumption, if compared to Air force System color.
- ✓ **Low maintenance costs**, if compared to Laser Technology

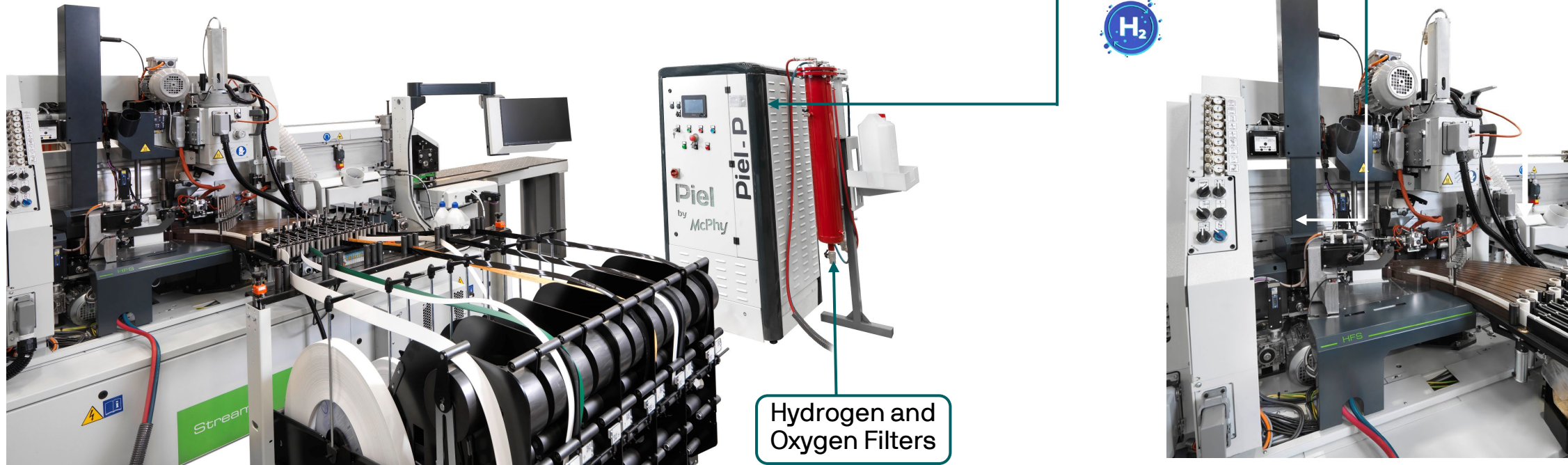
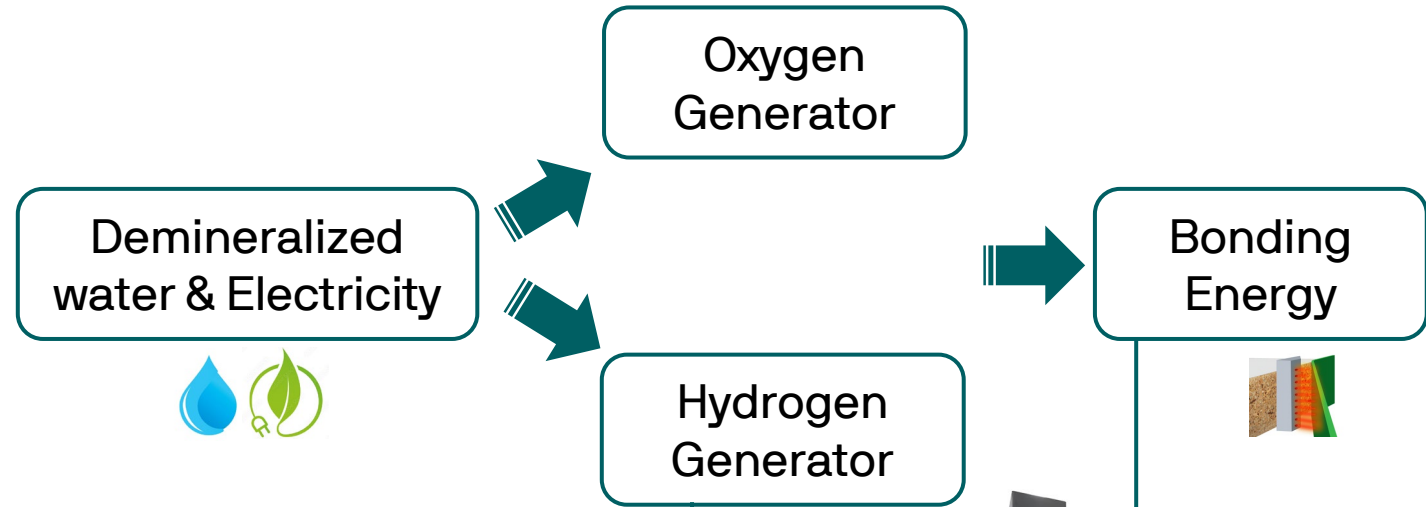
HIDROGEN FORCE SYSTEM



System Highlights

Hy-fuse System grants a perfect edge bonding without the use of glue

Edge activation through a hydrogen flame produced from **Water** and **Electricity**



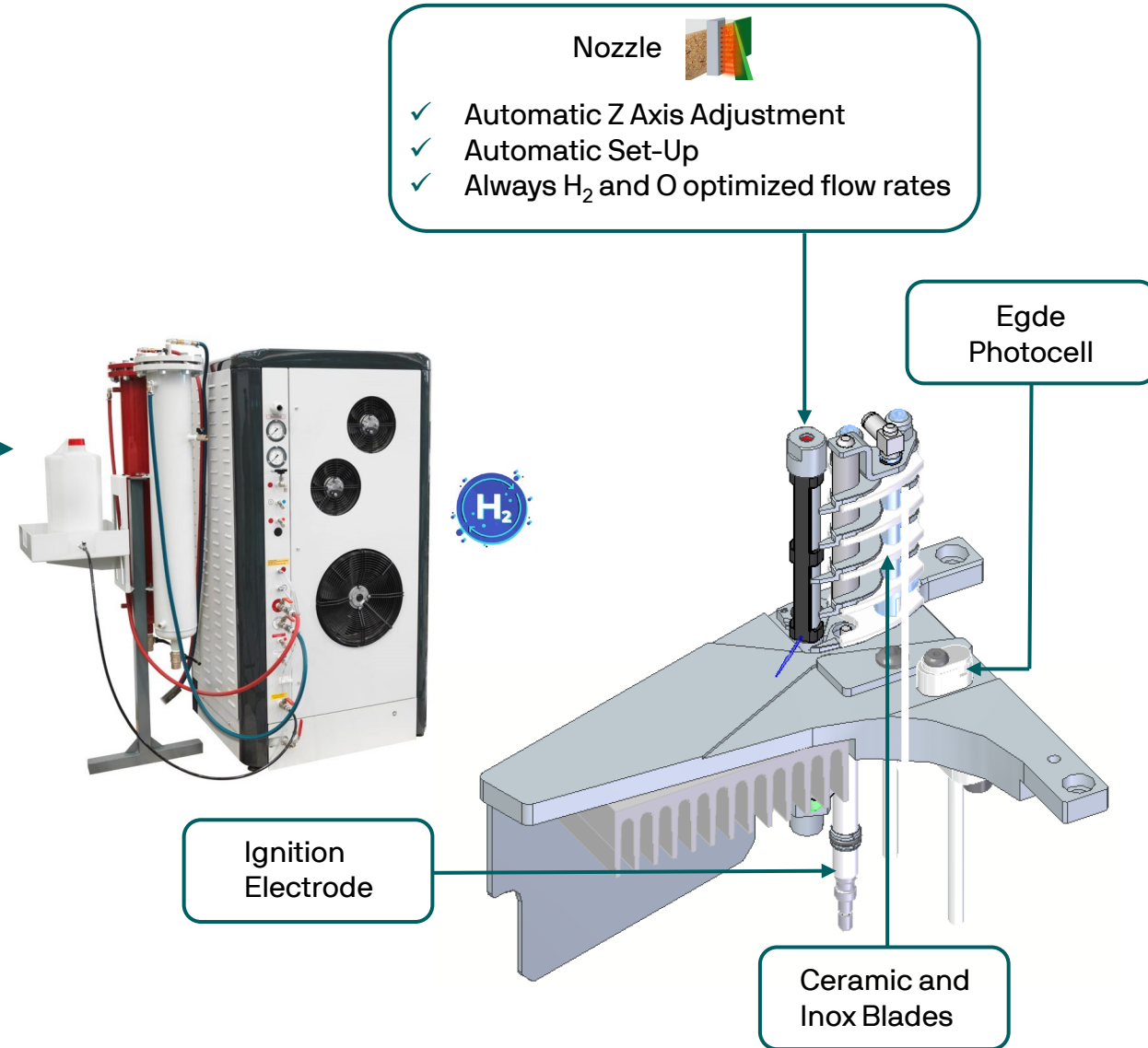
HIDROGEN FORCE SYSTEM



System Details

Hy-fuse system consists of **high-performance** components for the best **quality** and the best **reliability**:

- ✓ **Hydrogen Generator:** It produces Hydrogen (H_2) and Oxygen (O) from Water and Electricity through Electrolysis
- ✓ **High Performance MFC Valves** to control and optimize **automatically** hydrogen and oxygen flow rates
- ✓ **Ceramic and inox blades** to guide perfectly the edge near the nozzle
- ✓ **Photocell** to detect edge presence
- ✓ **Ignition electrode** powered from an ignition transformer.
- ✓ Nozzle includes **CNC Z axis** edge guide

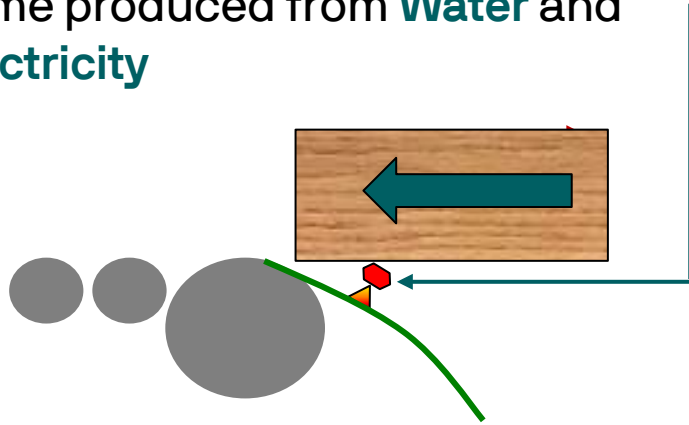


HIDROGEN FORCE SYSTEM

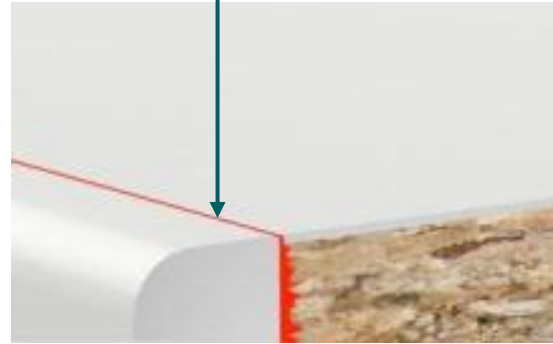


System Details

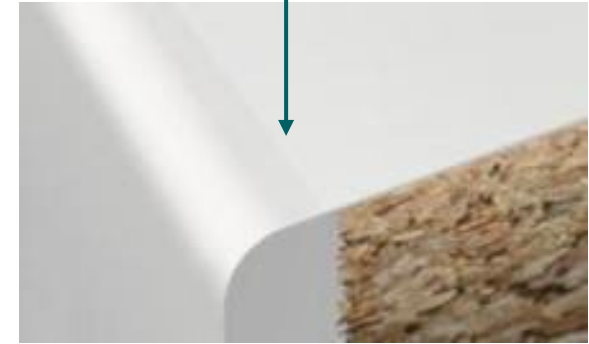
Edge activation through a hydrogen flame produced from **Water** and **Electricity**



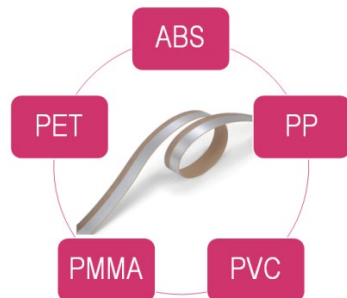
Functional layer



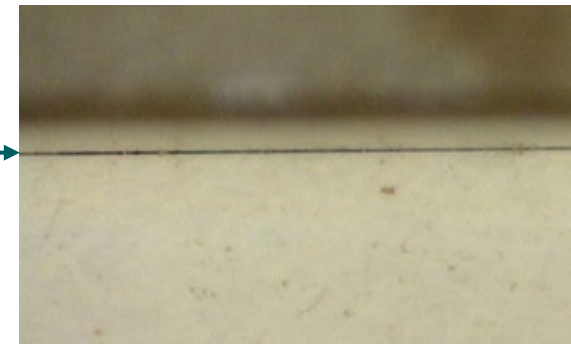
No glue line



Compatible with all energy-activated edges (including PVC)



Glue line with standard technology



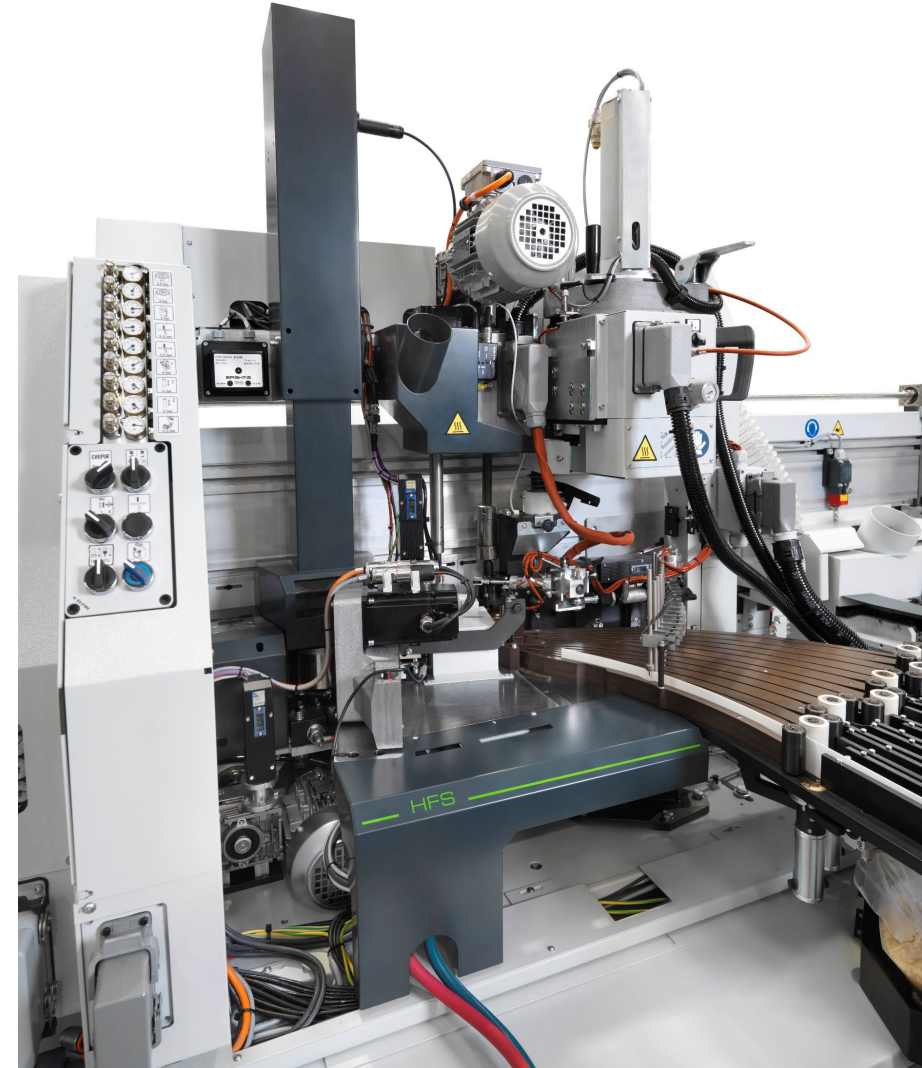
HIDROGEN FORCE SYSTEM



Technical Specs

- ✓ Available on **Stream MDS** and **Stream B**
- ✓ Available on **SP30** Gluing Unit
- ✓ Always in addition to a Glue system (PUR or EVA)
- ✓ **Batch One** working mode (Real Time Change: Zero Joint/Glue)
- ✓ Reduced Power Consumption (**-70%** vs AFS)
- ✓ **Low noise** system

Installed Power	13 kW
Warm Up Time	3 min
Max Machine Speed	30 m/min
Max Panel Height	40mm
Max Edge Height	45mm
Minimum Edge Thickness	1mm
Minimum Panel Gap	900mm



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Zero Joint Comparison

	AirForce System (Biesse)	Hy-fuse System (Biesse)	Competitors' Diode-Laser
Quality			
Batch One Flexibility: Zero Joint/Glue			
Edge Flexibility			
Easy-to-use			
Efficiency (Power Consumption)			
Initial Investment			
Maintenance costs			
Working Speed			

→ Peeling 90° Test

→ Biesse systems compatible with all energy-activated edges and NO setting changes needed depending on edge color.

→ Biesse systems are simpler and maintenance costs are lower.

Best Performance/Costs trade-off



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