



Jan Krollmann



Joining of different materials lays in our DNA.
Yet, we are still failing today.!



Neanderthals and early Homo sapiens used highly developed multi-material tools more than 200,000 to 300,000 years ago.



03/2025 45.000 Vehicles called back due to joining issues.
2002 - 2011 Mercedes called back 750.000 vehicles due to bonding issues

Let's define the new joining standard together.
Let's hyJOIN®

STOP GLUING. STOP SCREWING.
START JOINING.

EXPANSION



Technology Readiness & Scaling

INDUSTRIALISATION



4 years Prototyping & Testing

INVENTION



Research & Development



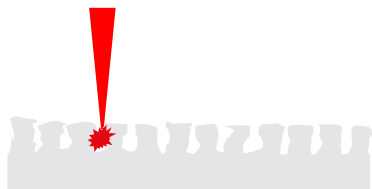
CORE BENEFITS

- cycle times down to 3 seconds,
- high-strength,
- media-tight joints,
- automation-ready,
- clean processing,
- reversible joining and
- adaptability to multiple material combinations.

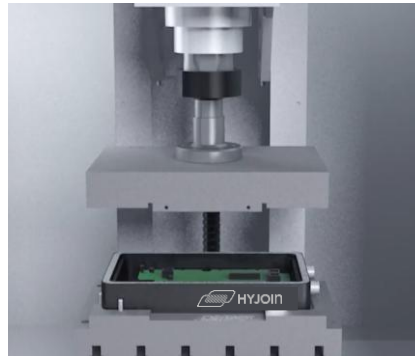
PRE-TREAT



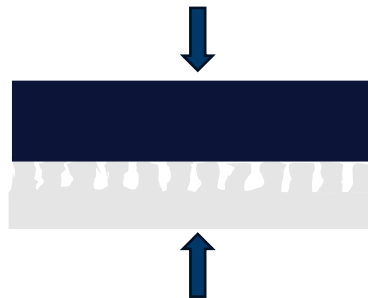
- Laser treatment
- Chemical etching
- Machined features
- Microscopic form fits



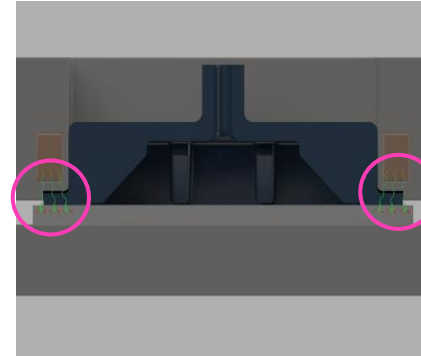
MEET



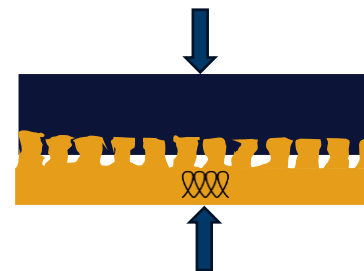
- Automated part handling
- Part fixation
- Pre-press processes



HEAT



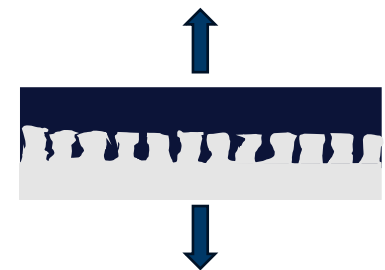
- Induction heating of metal part
- Joining force application
- Force / position control



COMPLETE



- Joined component
- Mechanical interlock



KEY BENEFITS

- + Any metal-plastic connection in seconds
- + Replacing adhesive joints and screws
- + Media-tight connections
- + Increase process efficiency in high-volume applications
- + Facilitated disassembly and recycling
- + Waste-free production
- + No additional material / chemicals

SUBSTITUTION OF
ADHESIVE
TECHNOLOGY

SUBSTITUTION OF
OVERMOLDS



THERMOPLAST

PA6, PA6.6, PA12, PP, PE, PPA, PPS, PC, POM, PAEK, TPU, PBT, etc.

Unverstärkt / Gefüllt / Verstärkt

METAL

Al, Fe, Ti, Mg, brass, Cu, etc.

Extrusion / Gießen / 3D-Druck etc.



#Max. Stresses: 15 - 30 MPa (DIN-EN 1465)

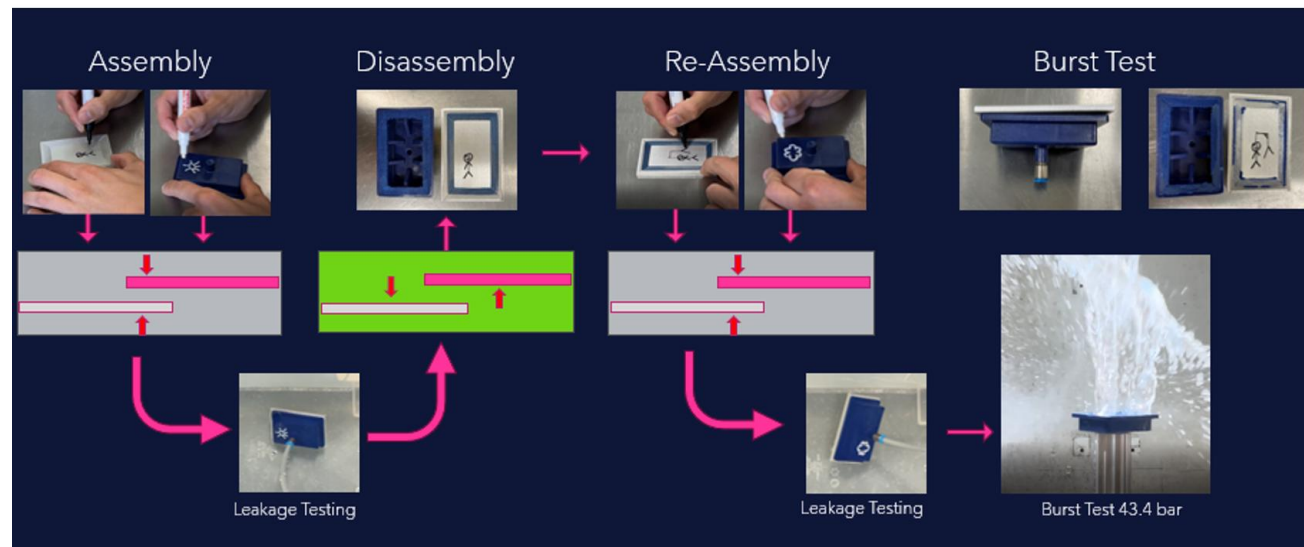
#Aging according to PV1209 (cyclic corrosion)

#Mediatight up to 30 bar*

*depending on the part geometry

Re:hyJOIN

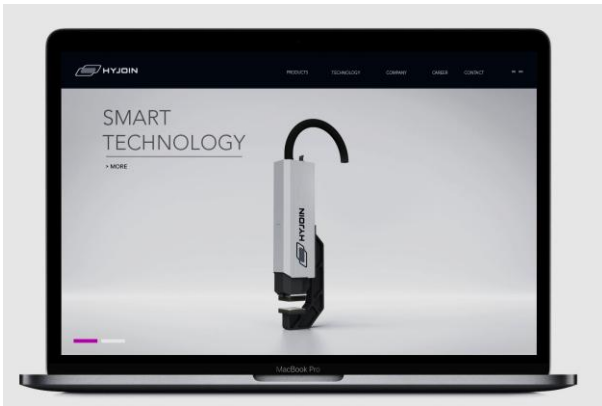
- Process is reversible
- Re-heating of joint
- Clean separation of components
- Re-joinable without losses in performance
- Reduce - Reuse - Repair - Refurbish - Remanufacture - Recycle
- Rethink your design



Video



SERVICE



- Tech Center R&D – from invention to prototype
- Engineering at the highest level – Design to X
- Design Thinking – Opportunity for your innovation
- Maintenance – 24/7 via cloud & in-person

JOB SHOP



- Boost your series products
- Deliveries in small batches

MASCHINEN



- Integrated and complete industrial Solutions
- Purchase or rental model
- Supply Chain Qualification

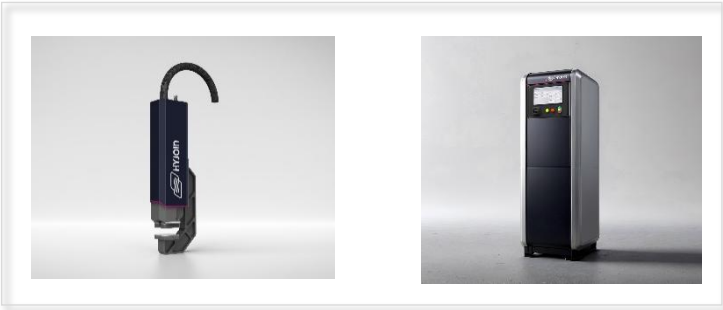
laserTREAT®



laserTREAT®

Surface pre-treatment

hyJOIN® tools that can be integrated



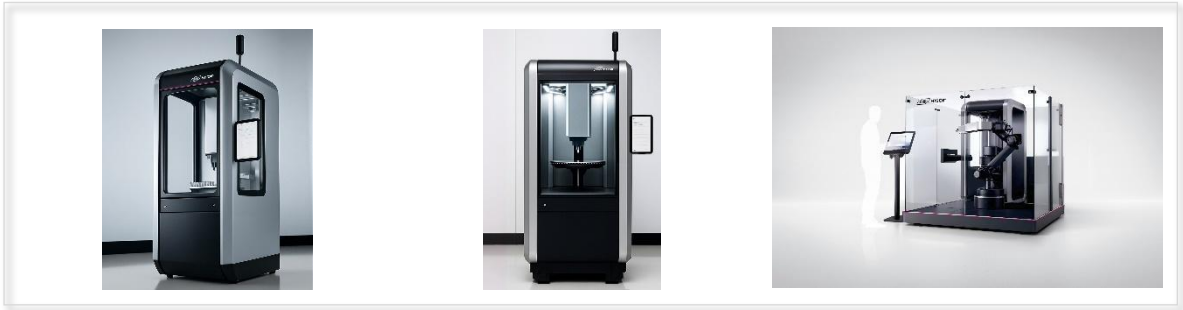
coreJOIN®

Joining module
C or I
configuration

coreSUPPLY®

Control unit with
Generator

hyJOIN® SYSTEM FAMILY



varioJOIN®

Semi-automatic
station

giroJOIN®

Machining cell with
Rotary indexing
table

atroJOIN

Machining cell with
pick & place robot



THANK YOU.

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