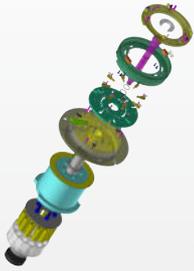


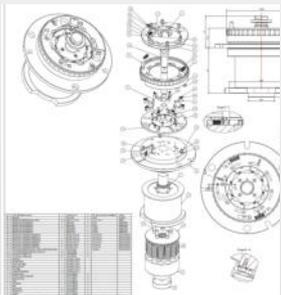
**Custom-made Machines,
Calculations,
Simulation,
Tooling,
Analysis,
R&D**



**Mechanical engineering
Design office
Automation
Robotics**



Study and design.



Technical data.



Realization.



**Reliable and robust
mechanical design to meet
your requirements from the
micron to the decameter.**



**Robot programming and
integration adapted to
your needs and products.**



**Simple automation on a
solid mechanical base
for a reliable,
maintainable machine.**



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88150 Thaon-les-vosges



Le
sur-mesure
industriel.



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**Instrumentation, Workstations,
Packaging, Marking,
Test benches, Assembly,
Customized equipment
Integrated Controls and
Measurements,**

**An international
clientele.**



**From problem analysis
to on-site equipment
commissioning.**



Le Sur-mesure Industriel is an industrial service company founded in 1991, with machine-builder status. You benefit from a single point of contact and our manufacturer's warranty.

Our assets

- Ability to adapt to a wide variety of issues in different sectors of activity
- Ability to propose solutions that were not part of a specification
- Search for the most reliable and efficient technical solution
- Our creativity, expertise and experience
- Our ability to handle and manage projects abroad

Our values and commitments

- Working directly with our customers and suppliers to ensure quality exchanges and relationships
- Design and construction of durable machines
- Support throughout the project
- 100% project completion, no legal claims



Multisector

Agri-food, Aeronautics, Automotive, Medical, Mechanics, Weapons, Leisure.



Our team

11 persons, including :
6 mechanical project managers,
3 automation project managers,
1 instrumentation project manager,
1 secretary-accountant



Design software

TopSolid'Design / Creo / Solidworks
SEE Expert / EPlan
Staubli SRS
Other software can be used if required.



Assembly workshop

A 650m² workshop is next to the design office to assemble and set-up all machines and equipment prior to shipment.

CREATIVITY

SUPPORT

REACTIVITY

ADVICES

RELIABILITY

Customer



**Expertise
Suggestions
Feasibility**

Customer satisfaction

**Issue Specifications
Need**



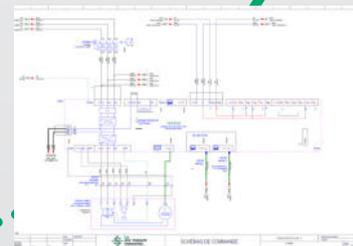
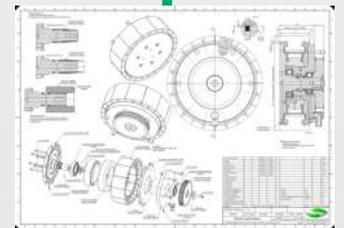
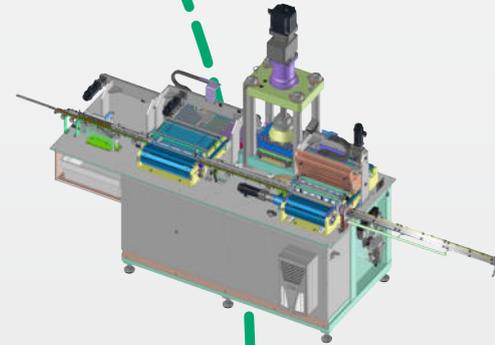
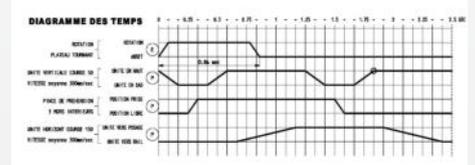
Item	Quantity	Unit	Description	Reference
1	1	Lot	Machine à commande numérique	...
2	1	Lot	Machine à commande numérique	...
3	1	Lot	Machine à commande numérique	...
4	1	Lot	Machine à commande numérique	...
5	1	Lot	Machine à commande numérique	...

**R&D
Analysis**

- Process research
- Technical calculations
- CAD modeling
- Concept review
- Overall drawings
- Wiring diagrams
- Design review

ERP

- Procurement
- Assembly
- Programming
- Set-up
- Technical documentation
- Installation
- Training
- Warranty
- After-sale service



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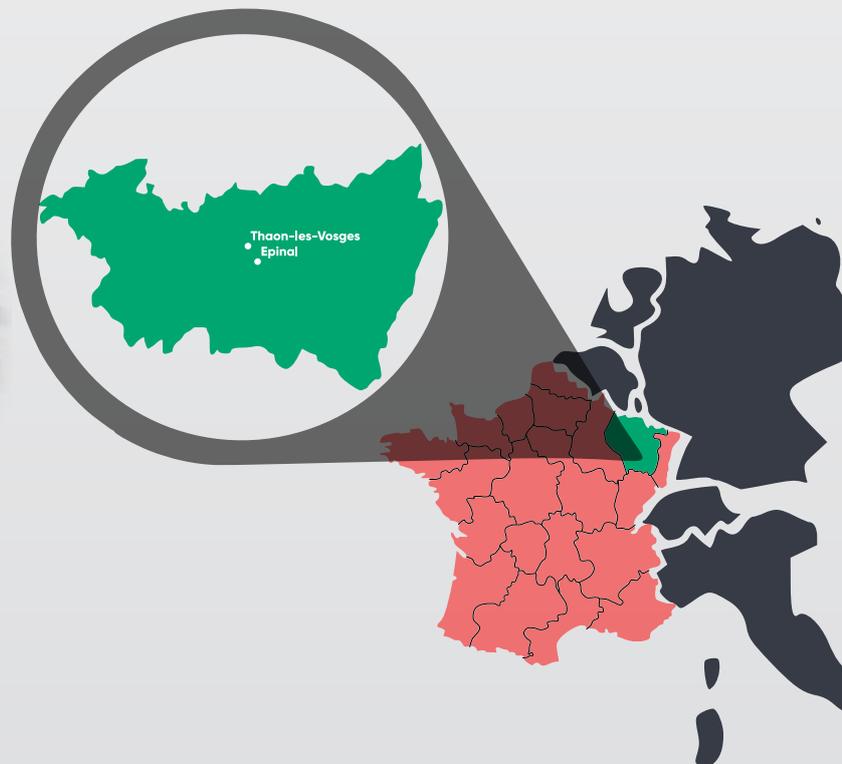
5 new customers a year since 1991

- | | |
|--------------------------------------|-------------------------------------|
| 1991 / Lamoise | 2010 / Tréfilerie des Vosges |
| 1992 / Clairefontaine | 2011 / Aesculap BBraun |
| 1992 / Norske Skog Golbey | 2011 / Marcillat Lactalis |
| 1993 / Eclatec | 2012 / Legrand |
| 1993 / Parisot meubles | 2012 / Merck Millipore |
| 1994 / Trane | 2012 / Schenck |
| 1995 / Arjo Wiggings | 2012 / Cimos (BA) |
| 1995 / ENSTIB | 2013 / CCN Booster (SK/CN) |
| 1995 / Garrett (FR/JP/SK/CN) | 2013 / Manurhin MHR |
| 1996 / Baccarat | 2013 / Compa (RO) |
| 1997 / Aérofun | 2014 / Institut Jean Lamour |
| 1997 / Nordon - Fives Cryo | 2014 / Renk France |
| 1998 / SIMB | 2015 / Cogeme (IN) |
| 2000 / Gantois | 2015 / VT2I |
| 2000 / Hager Electro | 2015 / Fromagerie Ermitage |
| 2000 / Ober | 2016 / Aptar Beauty |
| 2003 / Les Zelles | 2016 / Fertil |
| 2003 / Glaces Thiriet | 2017 / Mahle Behr |
| 2005 / Essilor | 2017 / Dow France |
| 2005 / Gris découpage | 2019 / Canson |
| 2005 / Viskase (FR/US) | 2019 / Clairefontaine Rhodia |
| 2005 / Kaysersberg Pack. | 2019 / Endress + Hauser |
| 2006 / EPB Séco Tools | 2019 / Fives Celes |
| 2006 / Liebherr Mining | 2020 / Moustache Bikes |
| 2006 / Woco / Anvis | 2021 / Debo Tech (CN) |
| 2007 / IUT de Mont-de-Marsan | 2021 / Fonatec (CN) |
| 2007 / Sitpa Nestlé | 2021 / Konica Minolta |
| 2008 / United Springs | 2022 / Satisloh (DE) |
| 2010 / Messier Bugatti Safran | 2023 / Liebehrr Components |

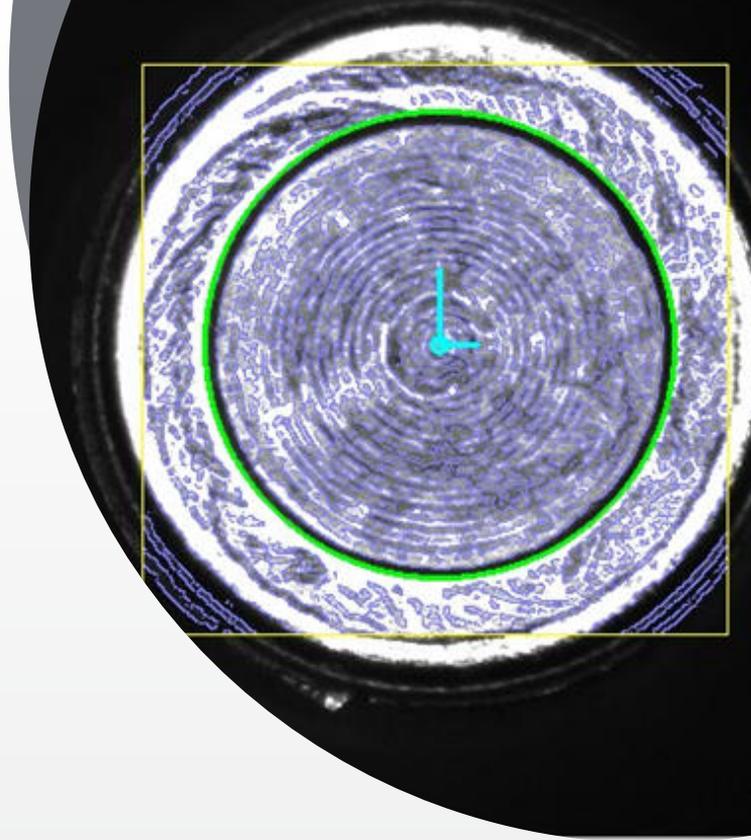


Marc THIERY
Jean-Baptiste GERARD
Olivier WILLMANN
Serge GUGGENHEIM
Sylvain MANGEL
Gabriel GERARD
Thierry LAMQUIN
Aurélien NOURDIN
Francis GREMILLET
Maxime HABRANT
Florence MARCHAL

Manager / Sales manager / Projects manager
Mechanical projects manager
Measurement / Robotics projects manager
Automation projects manager
Automation projects manager
Automation / Robotics projects manager
Accounting



Welding machine

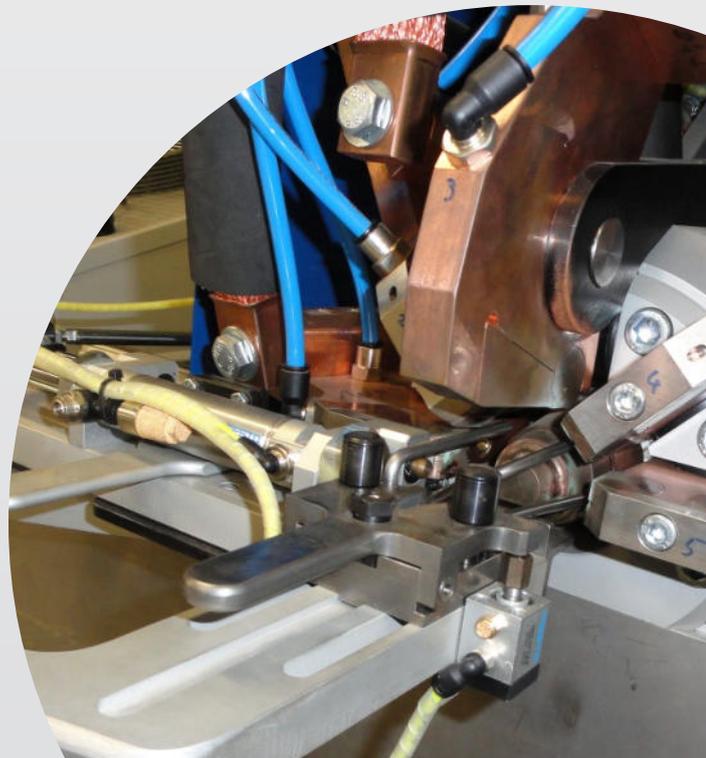


Laser, resistance and plasma welding equipment.
Laser welding with repositioning.
vision system.

Welding head positioning via two digital axes
for multiple welding points.

Manual adjustment of laser
adjustment.

Inert gas distribution to protect the weld.
Laser radiation-tight enclosure.





Assembly machine

**Automatic, semi-automatic or manual component feeding
by vibratory bowls or other appropriate technologies.**

Product flow adapted to the project.

**Integration of axis motors, robots or
other application-specific actuators.**

**Integration of machining and assembly functions:
drilling, tapping, screwing, riveting, crimping,
welding, gluing...**

**Integration of control and instrumentation functions
analog and digital sensors, probes,
gauges, vision...**

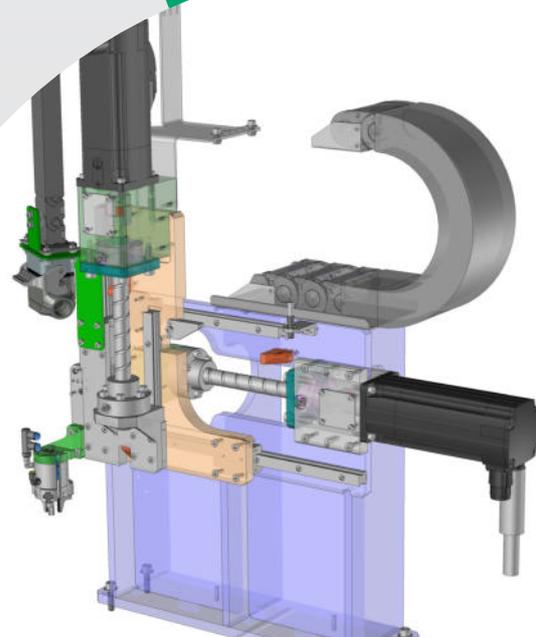
Data acquisition.

Performance analysis.

Communication.

Support and follow-up.

**Connections to
downstream
machines or
packaging stations.**



Industrial automation



PLC programming.
Advanced HMI development.
Production data recording.
Sizing and parameterization of motors and servomotors.
Programming of operating modes and interfaces.

Modification of existing programs.
Integration and management of safety systems.
Interfacing with robot programs.
Retrofit / modernization of machines.
Remote control.

**Example of a PLC
with integrated safety
modules**



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Laser marking machine for mass-produced parts

**Automatic machine feed
or manual loading of workpieces.**

10-position indexed turntable.

**High-speed ball-screw manipulators
and brushless motors for part handling.**

Customized laser integration.

Manual adjustment of firing angle from 0° to 90°.

Output up to 2,200 parts per hour.

Automatic focal distance.

**Automatic or manual orientation of engraving
to part geometry.**



**Static multi-position
marking**
**Dynamic marking with
rotating fixture**



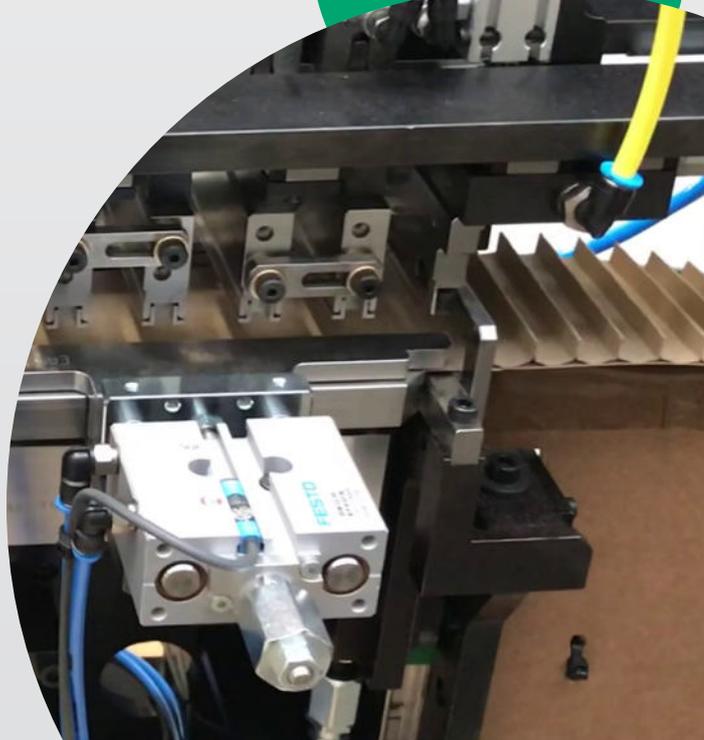


Packaging machine

- Distribution of products to be packed.**
- Distribution of flat cardboard boxes.**
- Folding and insertion of a cardboard divider.**
- Shaping of boxes.**
- Batching of products to be packed.**
- Box filling and closing.**
- Gluing and weighing boxes.**
- Box labelling and evacuation.**
- Output up to 250 products per minute.**

Design of any function required for your project.

**Accordian folding
dividers
to separate
products**



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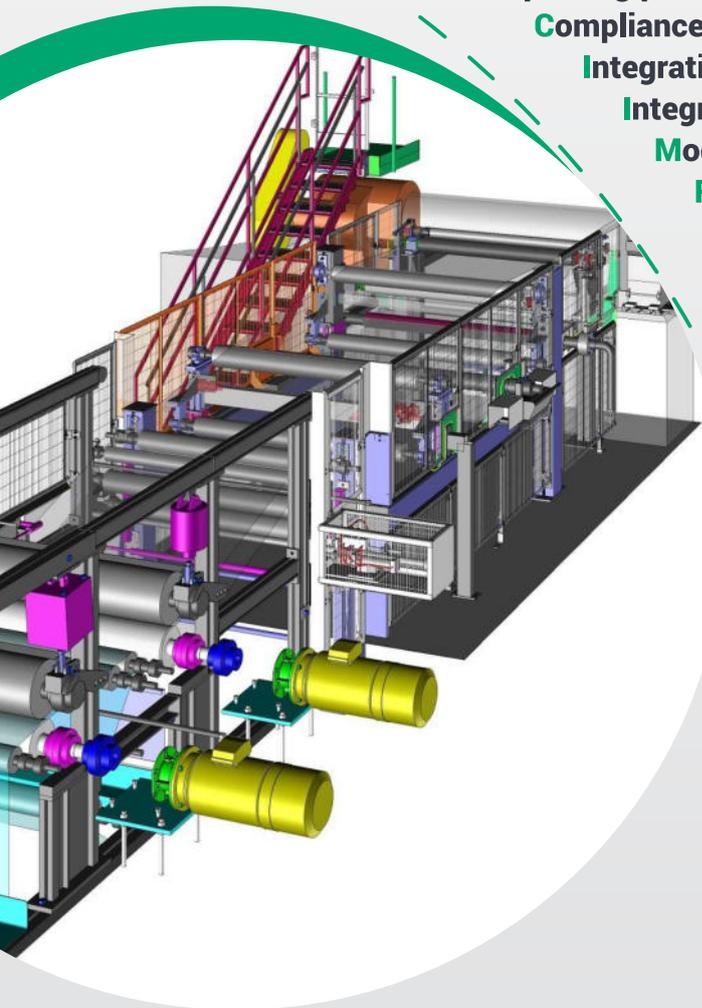
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Continuous improvement production processes



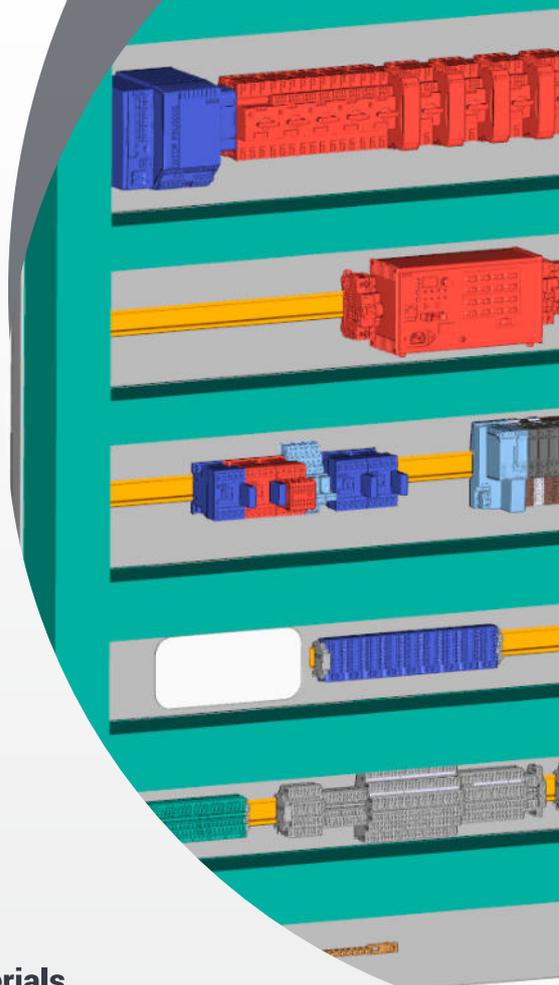
- Improving production processes.**
- Compliance and safety.**
- Integration of new technologies.**
- Integration of new functions.**
- Modification of tooling.**
- Re-design, equipment replacement.**
- Improving reliability, increasing output.**
- Instrumentation, communication.**

**At your service to
develop your production
resources.**





Electro-technic



Production of electrical and fluid diagrams.

Determining equipment

Produce comprehensive bills of materials.

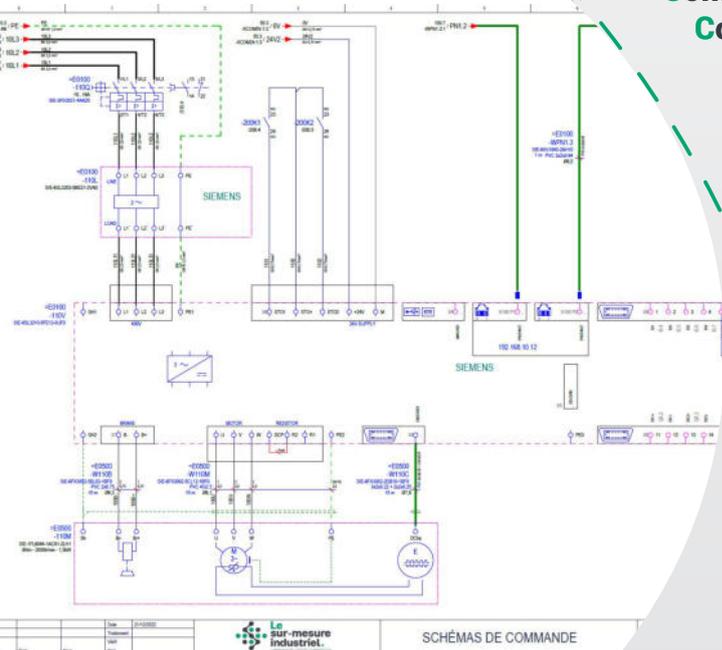
Retrofit of existing installations.

Operator and equipment safety.

Energy efficiency.

Communication.

Consideration of customers' maintenance CoPs.



**Electrical cabinet
assembly and wiring.**



Ergonomics workstation



Molds
disassembly,
reassembly
semi-automated

A few examples:

Freestanding hoist.

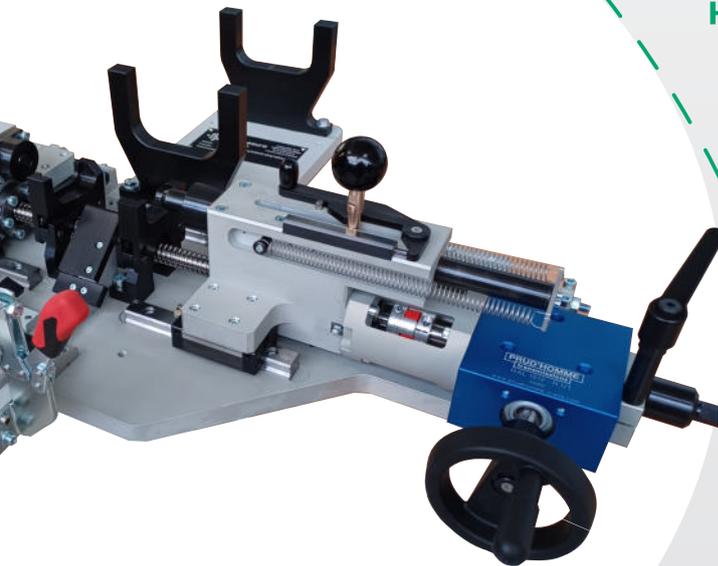
Height-adjustable workshop service trolley.

Installation of zero-gravity systems to assist
handling.

Manual bearing engagement station.

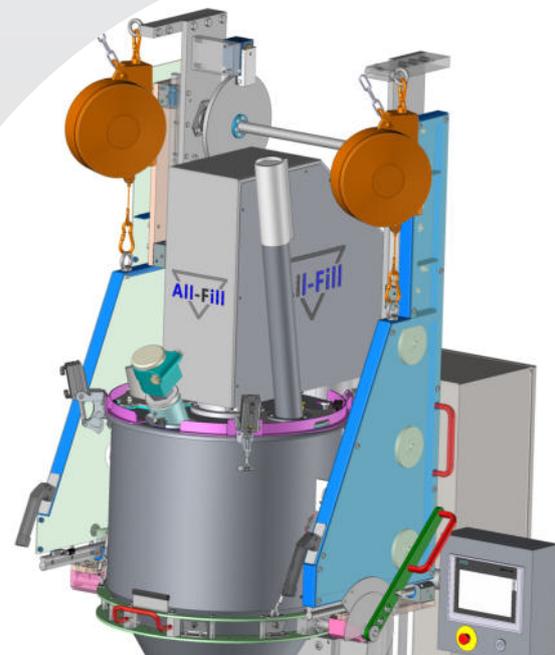
Ergonomic improvements to existing workstations.

Height-adjustable workstation.

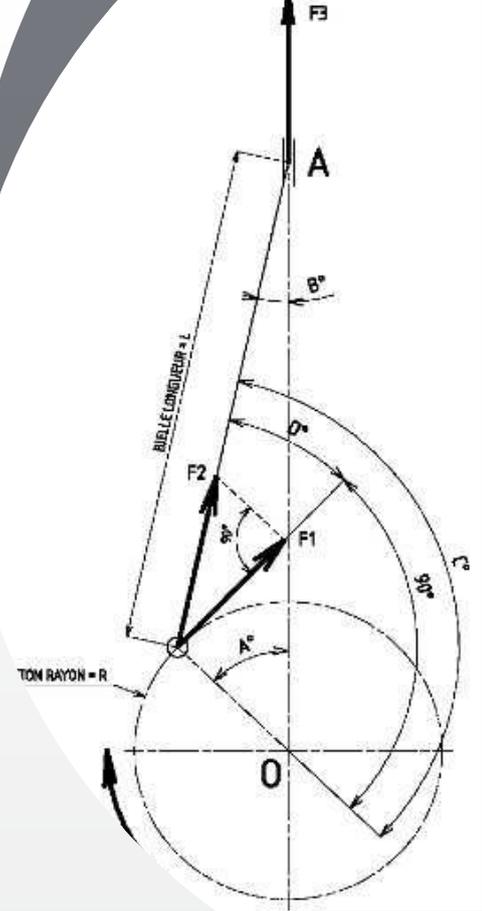


Mechanized
bearings assembly.

Creation of
customized handling
and maintenance
assistants



Feasibility studies
Process studies
Flow studies
Technical calculations
Preparation of technical specifications



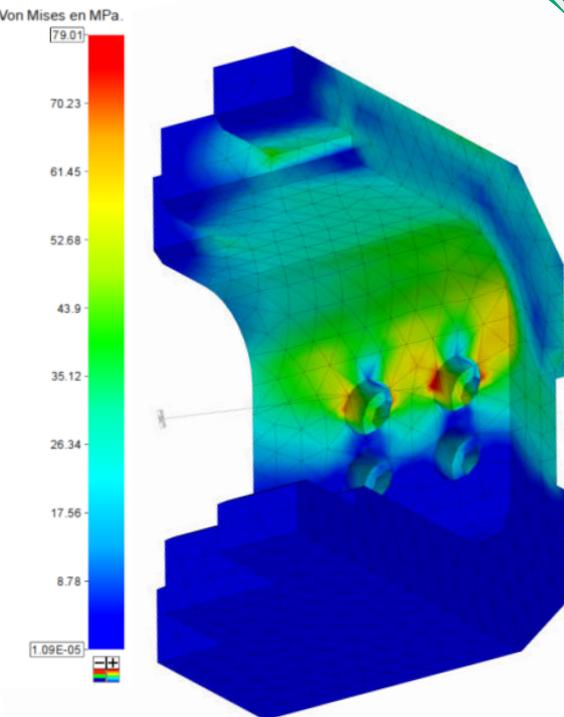
Cam tracings from time diagrams
or a law of motion for synchronous and
perfectly repetitive mechanisms.

Finite element calculations.

Edit calculation notes.

Calculate the braking of large zip lines.

Dimensioning of components and systems.



A simple calculation
for a maximum
pleasure!



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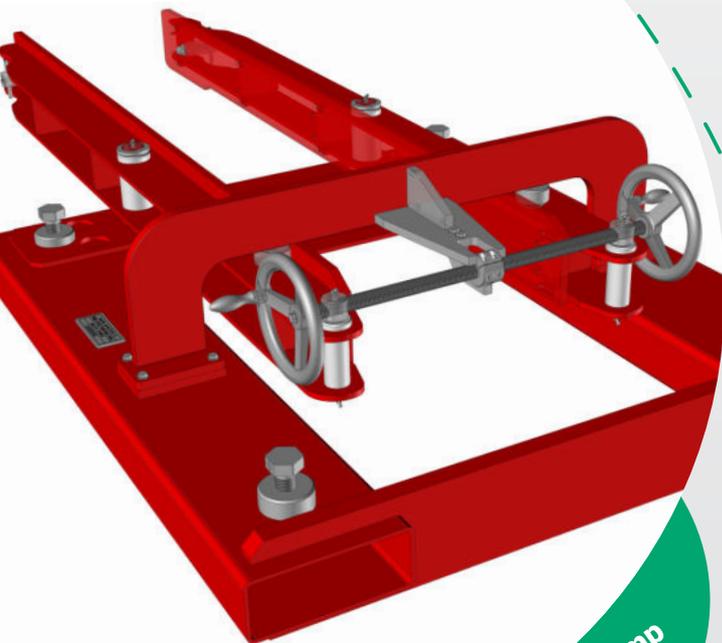


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Handling and lifting tools

- Design and manufacturing drawings.
- Calculation notes in accordance with FEM regulations.
- Load testing.
- Manufacturing and CE marking.
- Definition of slings and associated shackles.

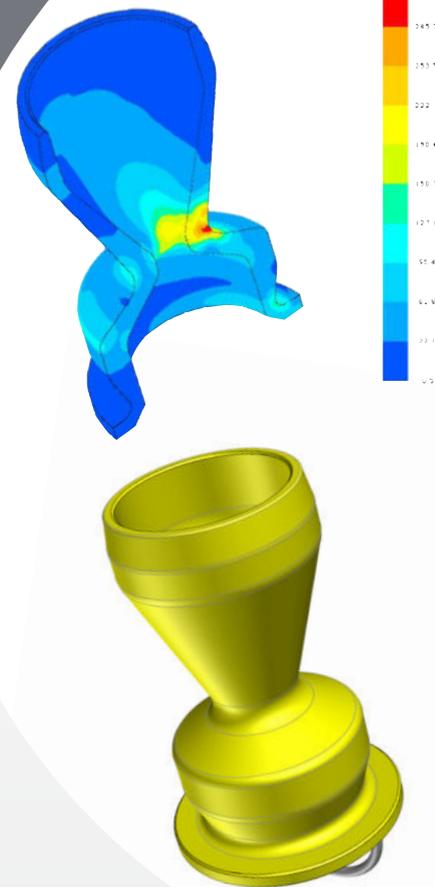


Handling clamp
on forklift

Spindle
handling
made-to-measure
Maximal payload=40kg



Lifting pin
15 000 DaN



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Machine tools

5 machining spindles (4,000 to 18,000 rpm) for edging, planing, routing.
Machining travel in X: 3,500 mm.

3 servo axes for speed and position, machining parameters machining parameters accessible via HMI.

Can be used for plastic parts (PVC, PU), wood or non-ferrous metals.

Soundproofing through high-frequency damping.

Suction close to tools with transport nozzles



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Automatic riveting machine

Machine with 2 manual loading stations.

3-position indexed turntable.

Gyroscopic riveting unit with stroke-dependent riveting force as a function of stroke.

Machine control via PC panel.

Vision control of part presence and conformity of part numbers.

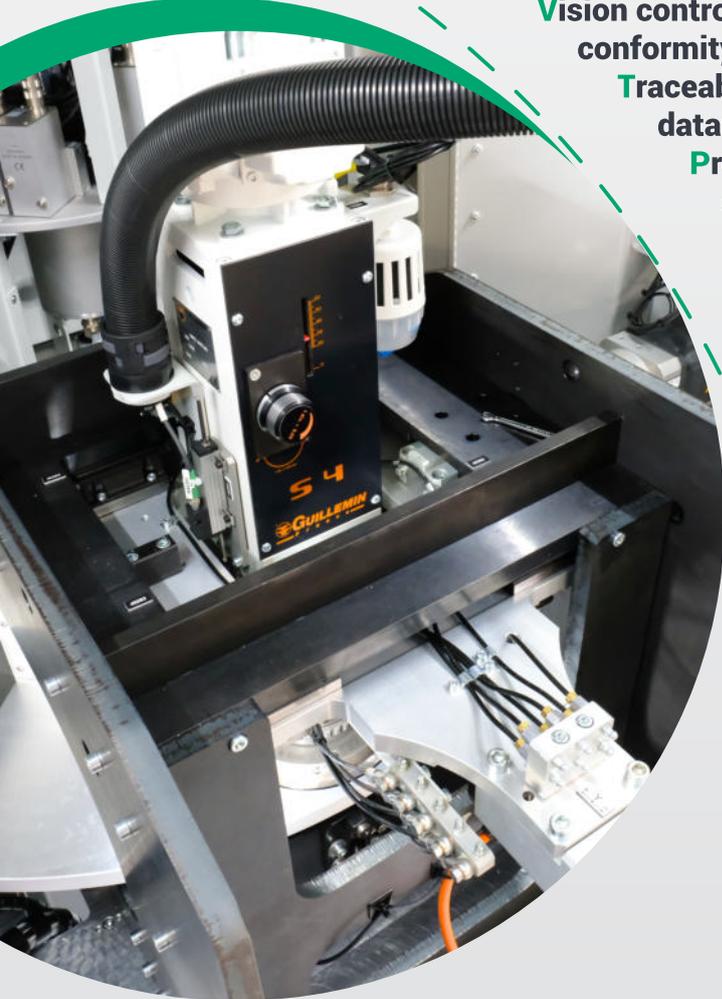
Traceability of parts produced thanks to camera-based datamatrix reading.

Production data recording and available on the company network.

Production of tooling required for positioning of parts before riveting.

Or any other configuration adapted to your project.

**A cross table
100mm on X and Y
for multi-position
riveting**



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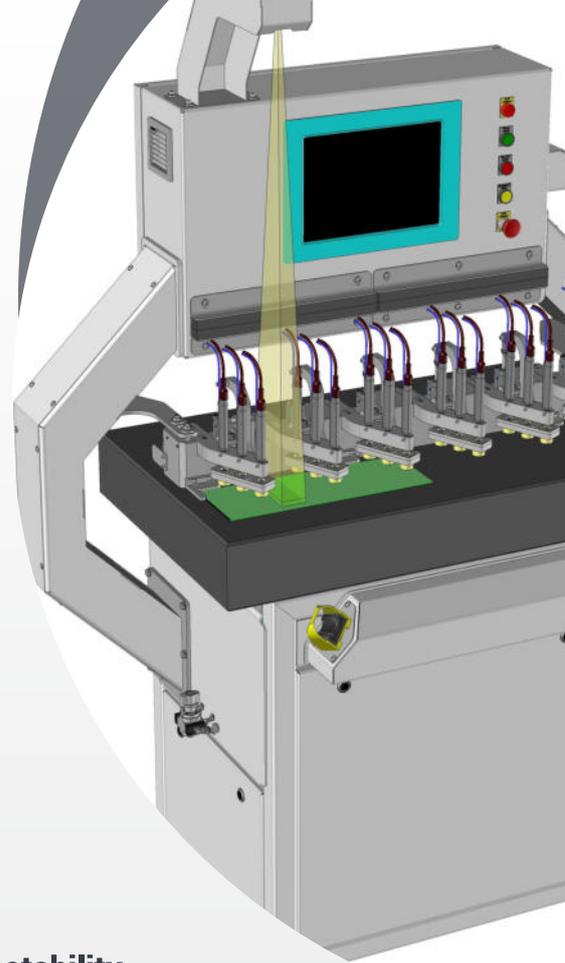
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Measuring machine



Tolerance control using probes.

Geometric control by vision.

Leakage flow distance measurement.

Runout measurement column with repeatability after calibration $<0.2 \mu\text{m}$.

Customized positioning and holding of parts.

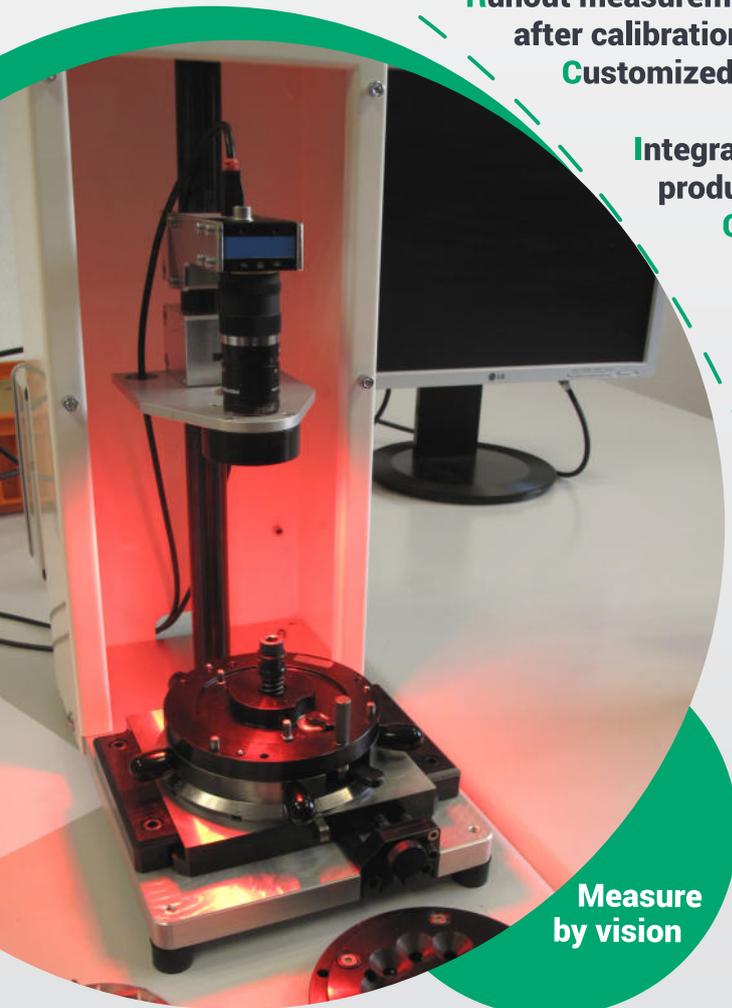
Integration of measurement and control functions inside production machines for :

Quality control

Preventive maintenance

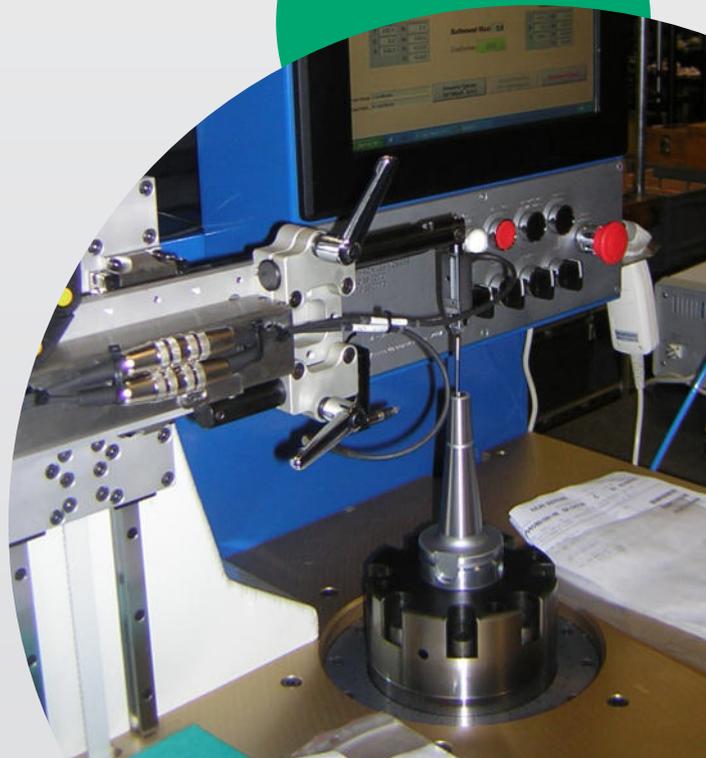
Data acquisition

Performance analysis



Measure by vision

Rotation of workpiece on air bearing





Paper reeler

Tension-controlled unwinding of parent reel.

Coil diameters up to 300mm.

With or without cardboard mandrel.

Web widths from 330 to 2000mm.

Maximum roll weight: 30kg.

Paper density from 35 to 640 g/m².

Yardage accuracy <1%

Tying of rolls.

Rolls can be packaged in a carton tube.

Fully automated machine.

Or any other configuration to suit your needs.



**Adjustable longitudinal
slitting position
New blades can be added**

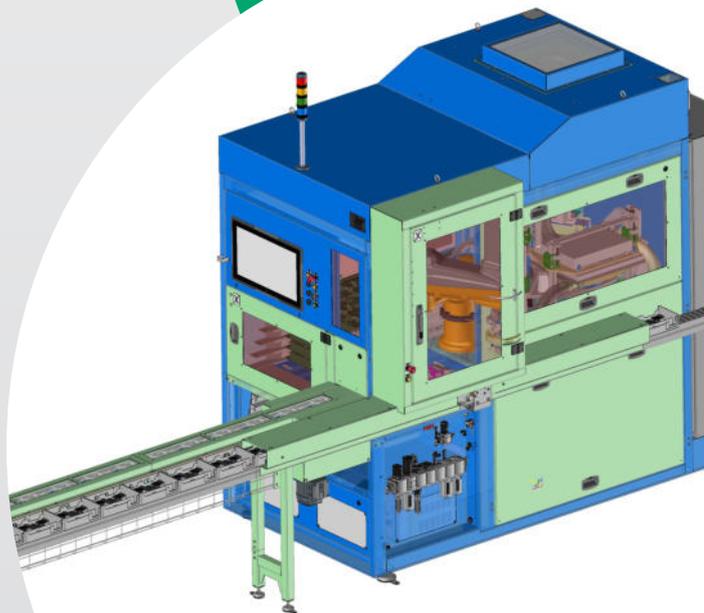


Retrofit and machine modifications

Conversion of a Müller Martini tri-blade cutter into a conversion to a round-corner cutter at 5,500 cuts/hour, with passage of single brochures or brochures stacked by 2.

- CAD modeling based on existing equipment.**
- Reconstruction, with modified functions.**
- Integration of safety functions.**
- Integration of new functions on a production line.**
- Modification of automated systems.**
- Retrofit of actuators and electrical cabinets.**

Addition of a conveyor and modification of the openings of an existing machine



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Case hardening



- Production of welded sheet metal casings.**
- Adaptation of the casing to the structure of the existing machine.**
- Customization.**
- Creation of monitored openings and removable panels.**
- Design, prototyping and industrialization, for equipment manufacturers.**

Enclosure of an existing machine and interfacing with product infeed and outfeed systems.



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Robotic

Determination of robot type according to application, presence of operators, environment.

All makes, depending on application.

6-axis robots, SCARA robots...

Component assembly.

Product handling.

Machine loading.

Simulation, programming by us

Interfacing with the PLC.

Custom-designed on-board grippers.

Electrical and mechanical integration.

Energy routing.

Integration of safety functions.

A 6-axis robot equipped with a 7th digital axis to adapt to products



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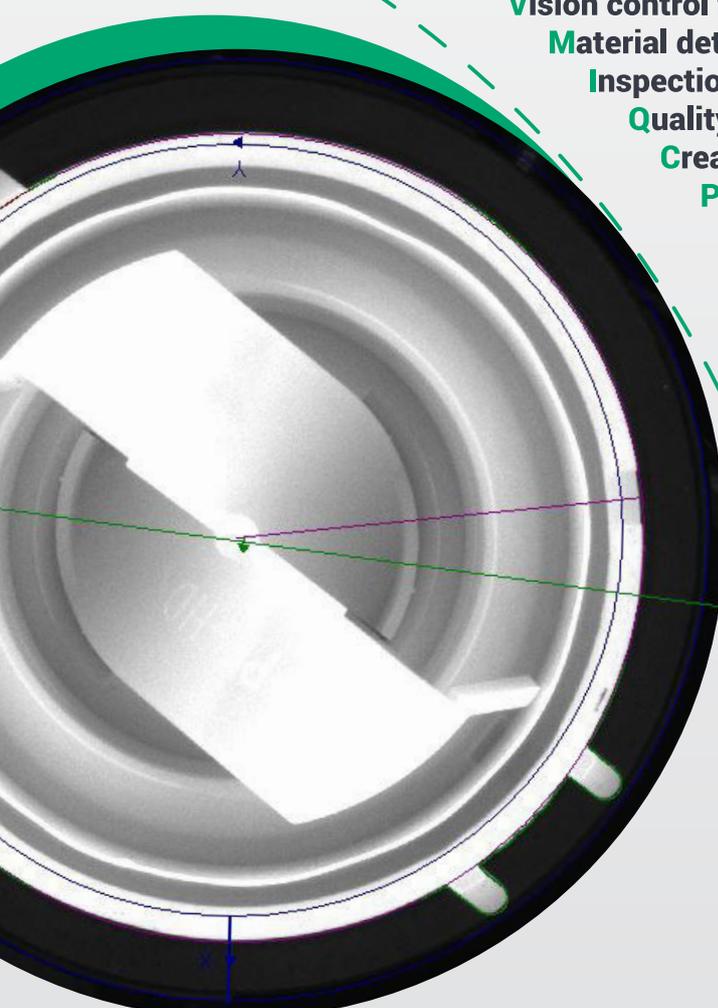
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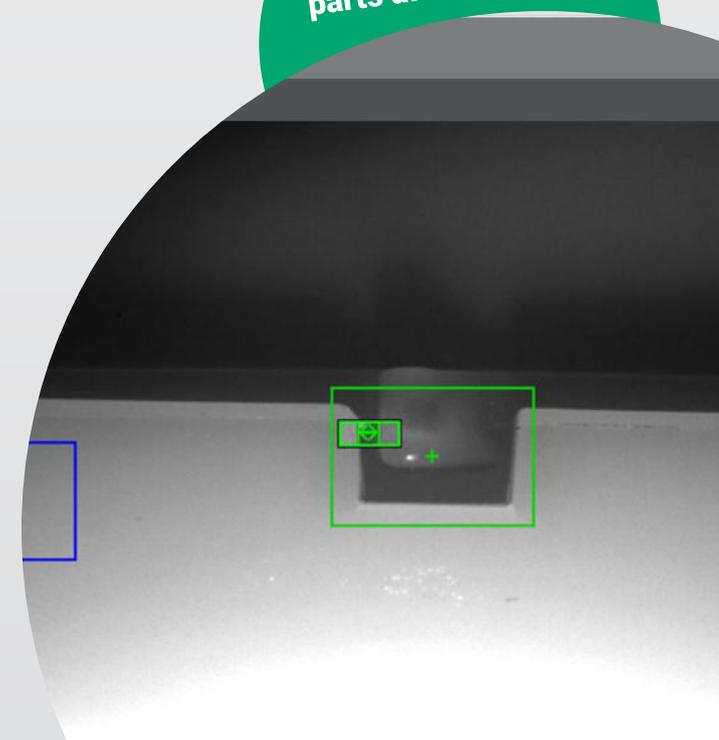


Industrial vision

- Vision control feasibility.**
- Material determination.**
- Inspection routing creation.**
- Quality control, coding, measurement, orientation.**
- Creation of special lighting for specific applications.**
- Programming and interfacing with PLC.**



**Check positioning of
parts after assembly.**



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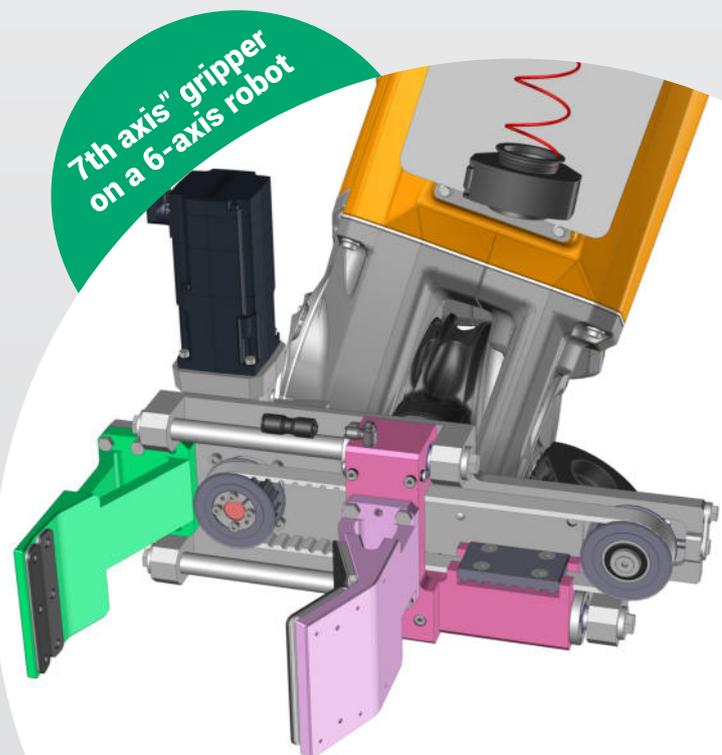
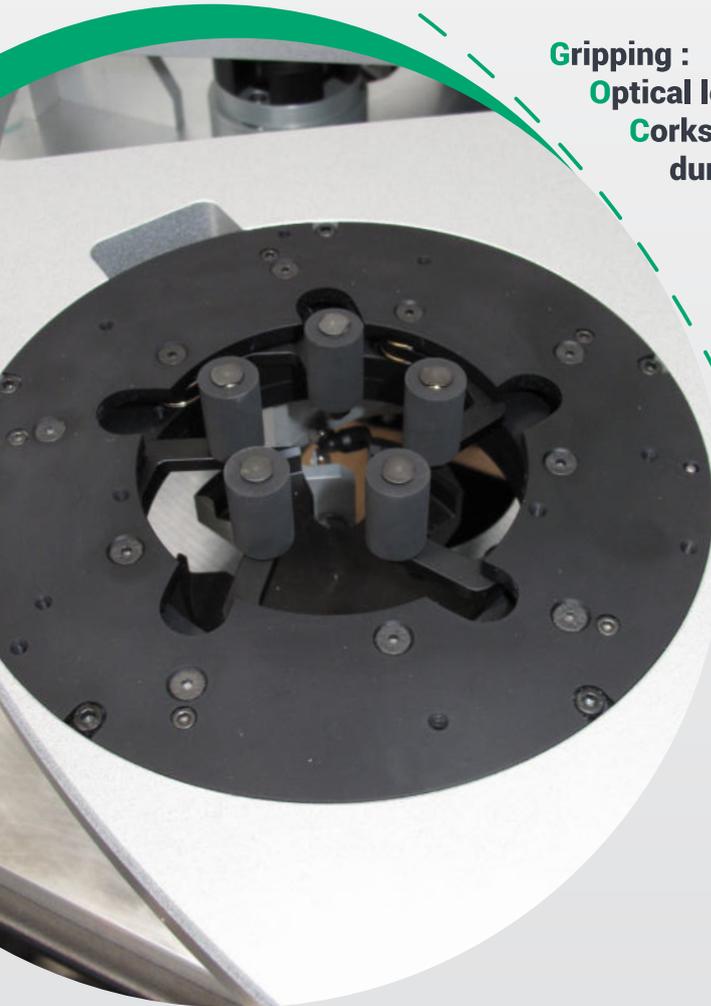


Custom-made grippers

Design and manufacture of all types of grippers adapted to your products and their tolerances, environmental constraints...

Gripping :
Optical lenses, bottles,
Corks, with position holding during insertion, etc...

Vacuum or magnetic gripping.
Pneumatically or electrically actuated.
Hook-type gripper.
Surface treatment compatible with vision control.
Grippers suitable for unthreading.



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Stationery converting machine

Notebook slitting cutter, cam mechanism and brushless brushless motorization.

Watercolor paper scroll stamping, synchronization speed up to 50m/min.

Cartoning of graphic papers.

Round-corner trimmer for bound, sewn or quilted or stitched signatures.

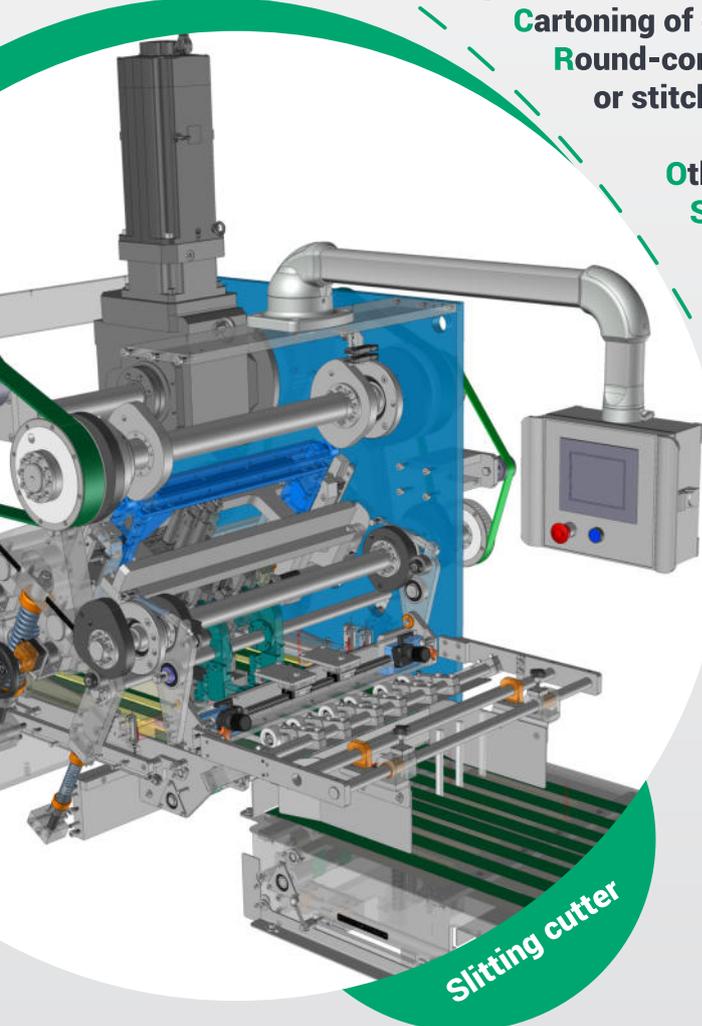
Other applications and automatic mechanizations:

Stacker

Stack turner

Retrofit

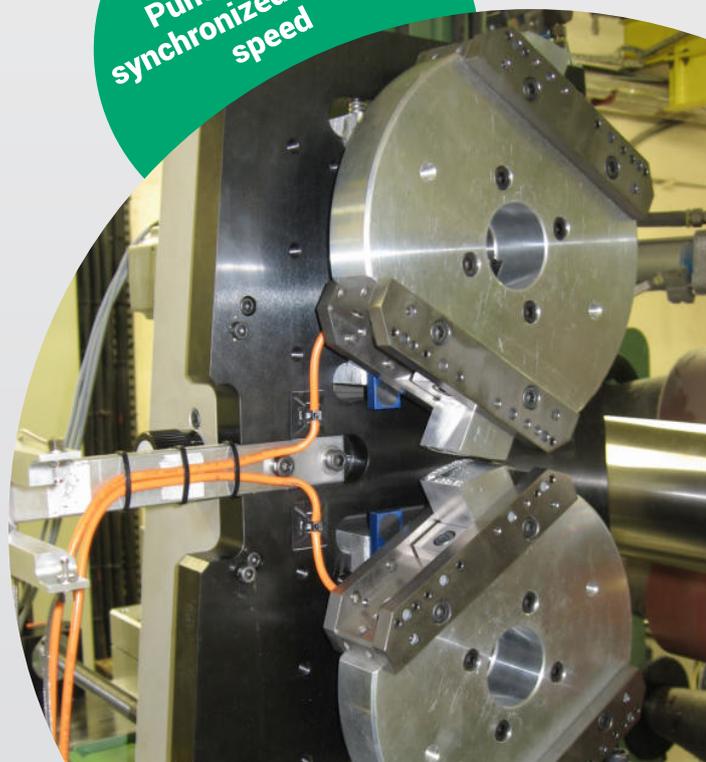
Punch and die synchronized to paper speed



slitting cutter



Cartoning line



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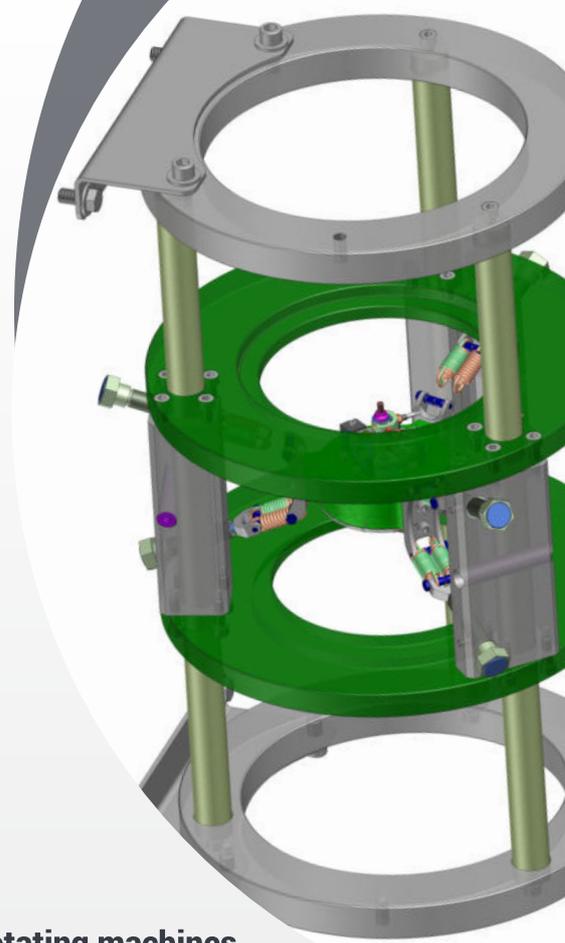
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Test bench

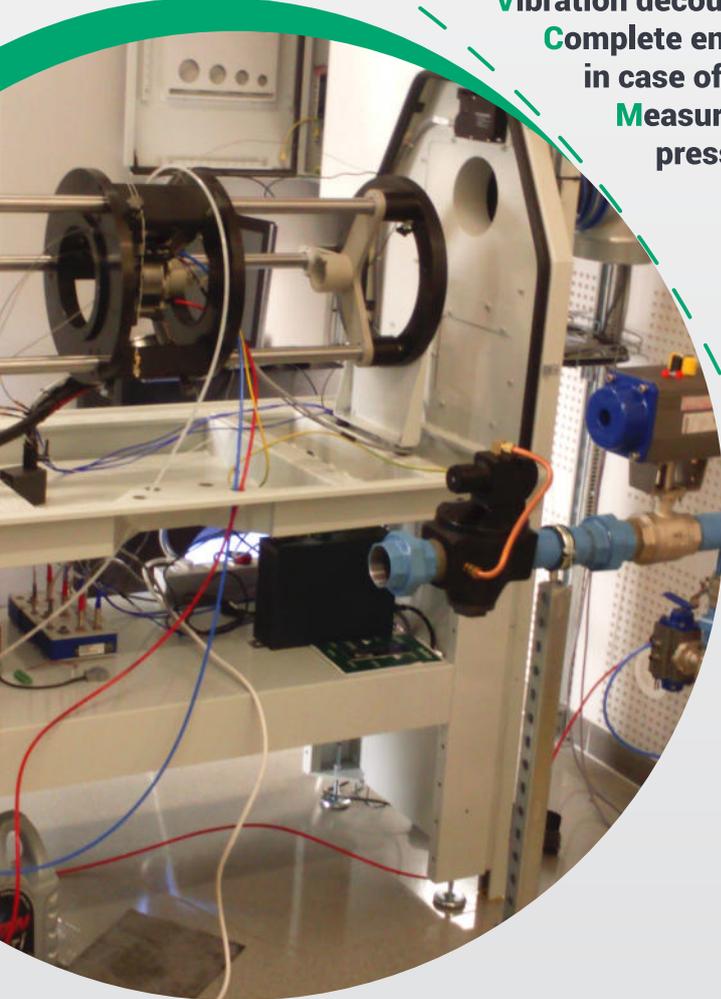


Vibration measurement of high-speed rotating machines.

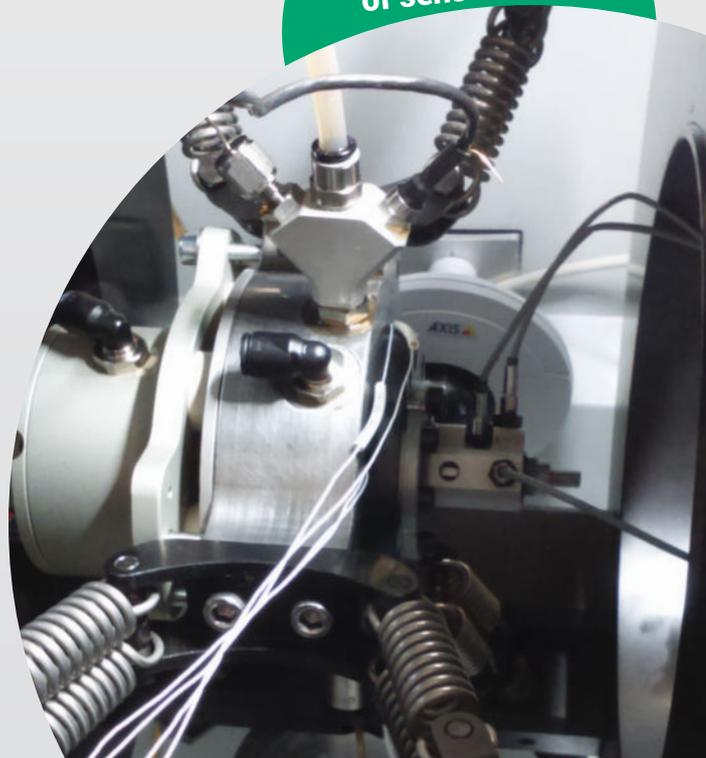
Vibration decoupling of fixed structure.

**Complete encapsulation to limit splashing
in case of breakage.**

**Measurement of rotational speed, temperature
pressure, flow, shaft orbit.**



**Acquisition
and post-processing
of sensor data**



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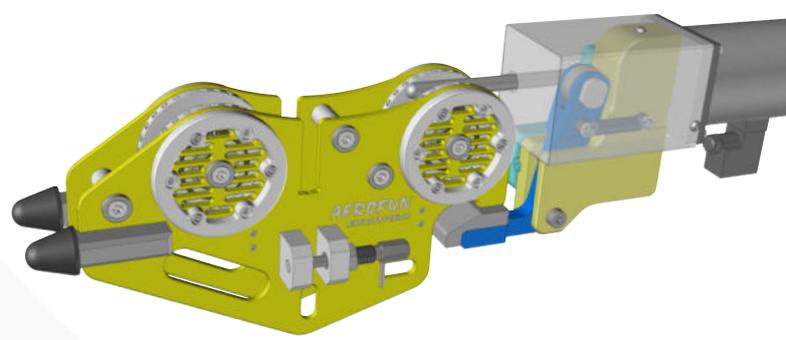


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Super Fantasticâble

**Calculation, design and production of lowering carriages,
braking stations.**

Maximum downhill speed: 150 km/h

**Maximum braking station input energy: 49 kJ
(90kg crew arriving at 115km/h)**

**Braking distance from 8 to 35 m
depending on descender weight and speed.**

Since 2013, tandem descent.

Installations :

Léogang (Austria)

Super besse

Le Lioran

Olhain

Rio de Janeiro (Brasil)

Les Orres

Fiscal (Spain)

Arcs 2000

Vinpearl (Vietnam)

...

**Installations
realized by
Aerofun - Fantasticable**





Handling system



**Designed for specific environments
or atmospheres.**

Customized lifting stroke.

Motorized vertical actuation.

Autonomous battery-powered manipulator.

Easy to handle thanks to specially mounted wheels.

Gripping accessory can be adapted as required.



**Vertical movement
drived by
a toothed belt**



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