

Strong & Flexible

A different approach to manufacturing
mechanical and mechatronic components

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- 03** **Technologies** 
- 04** **Form your World** 

01

Facts & Figures



At a glance

Since 1963



More than 1,000
customers



1,500 Employees



22 Factories



4 Continents



10 Countries

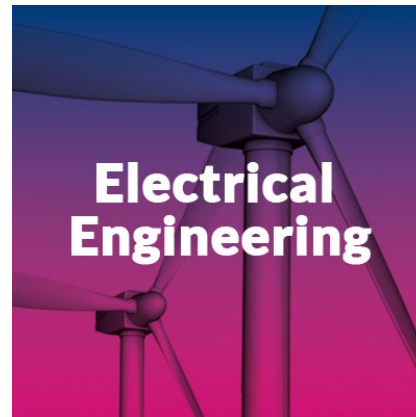
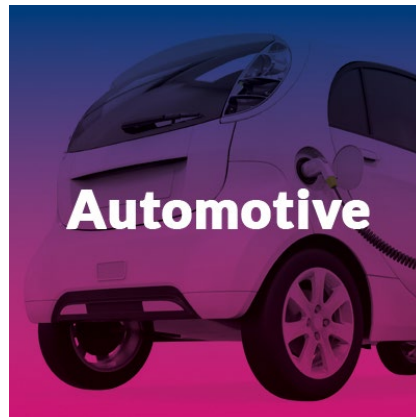
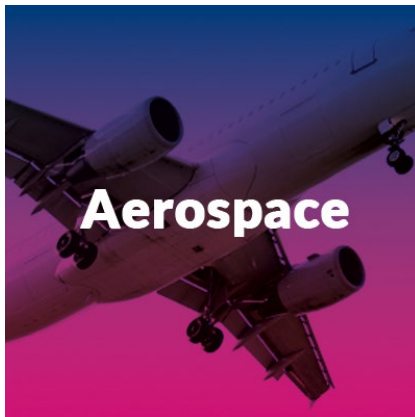


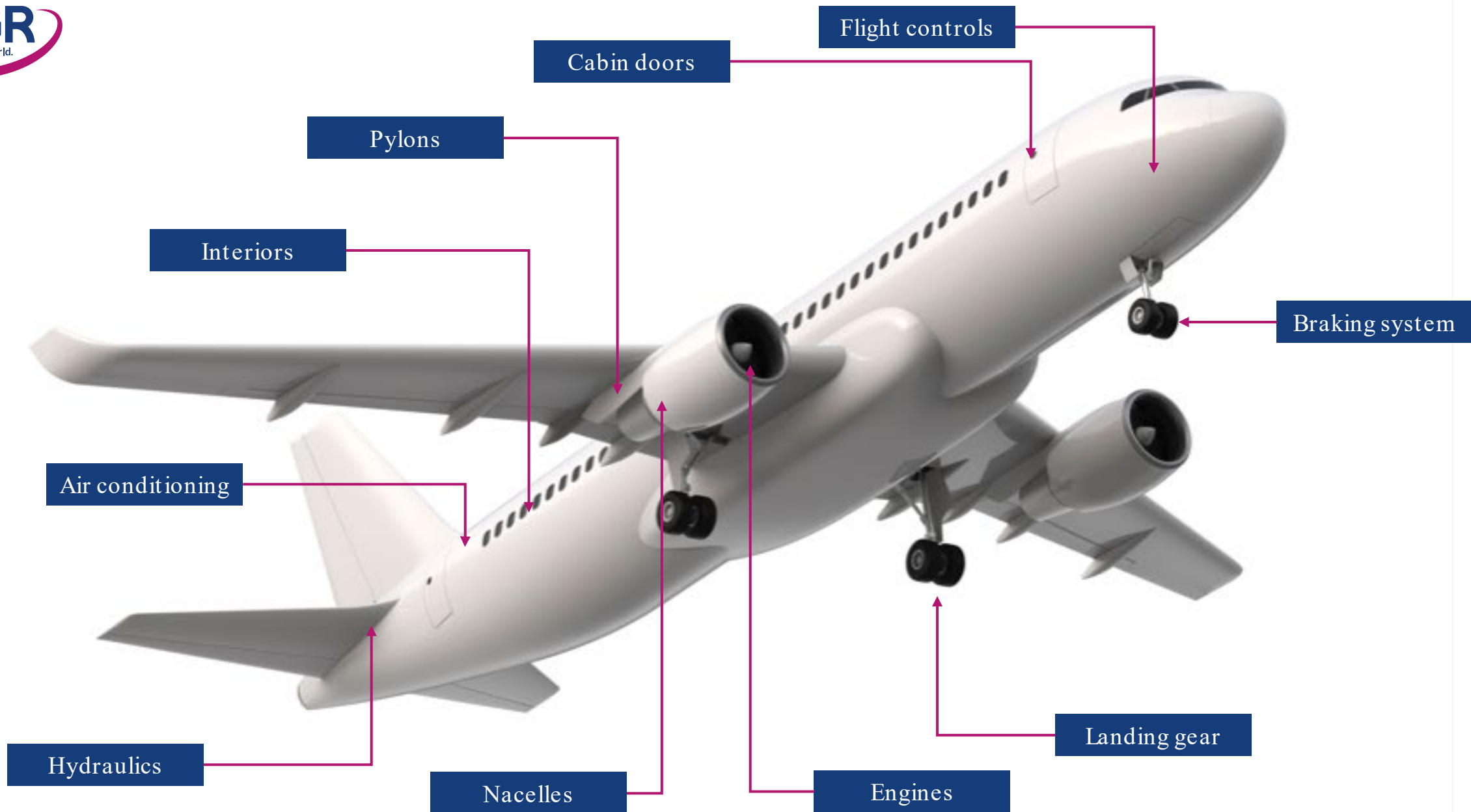
All figures 2023

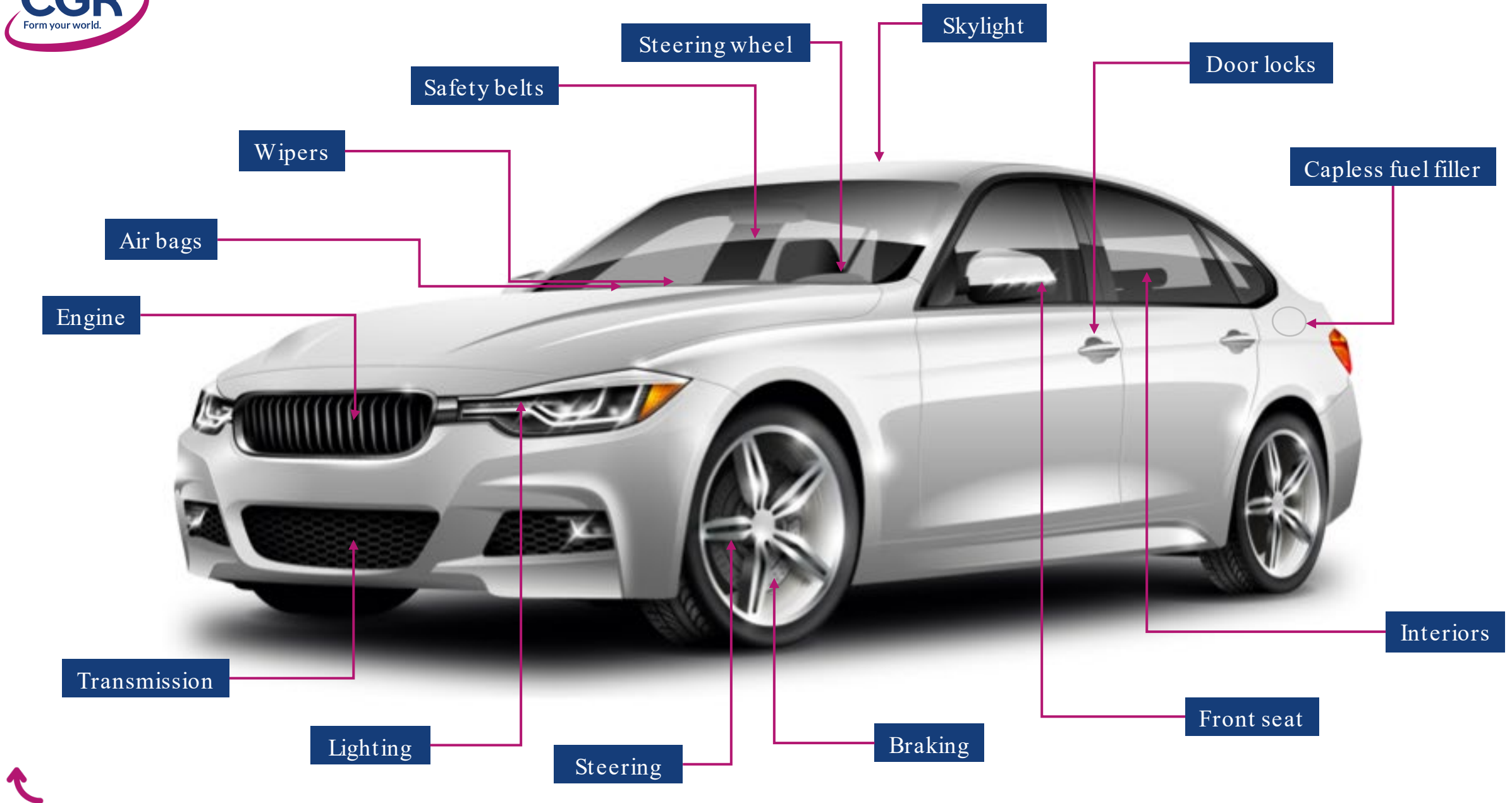


Aerospace, automotive and beyond

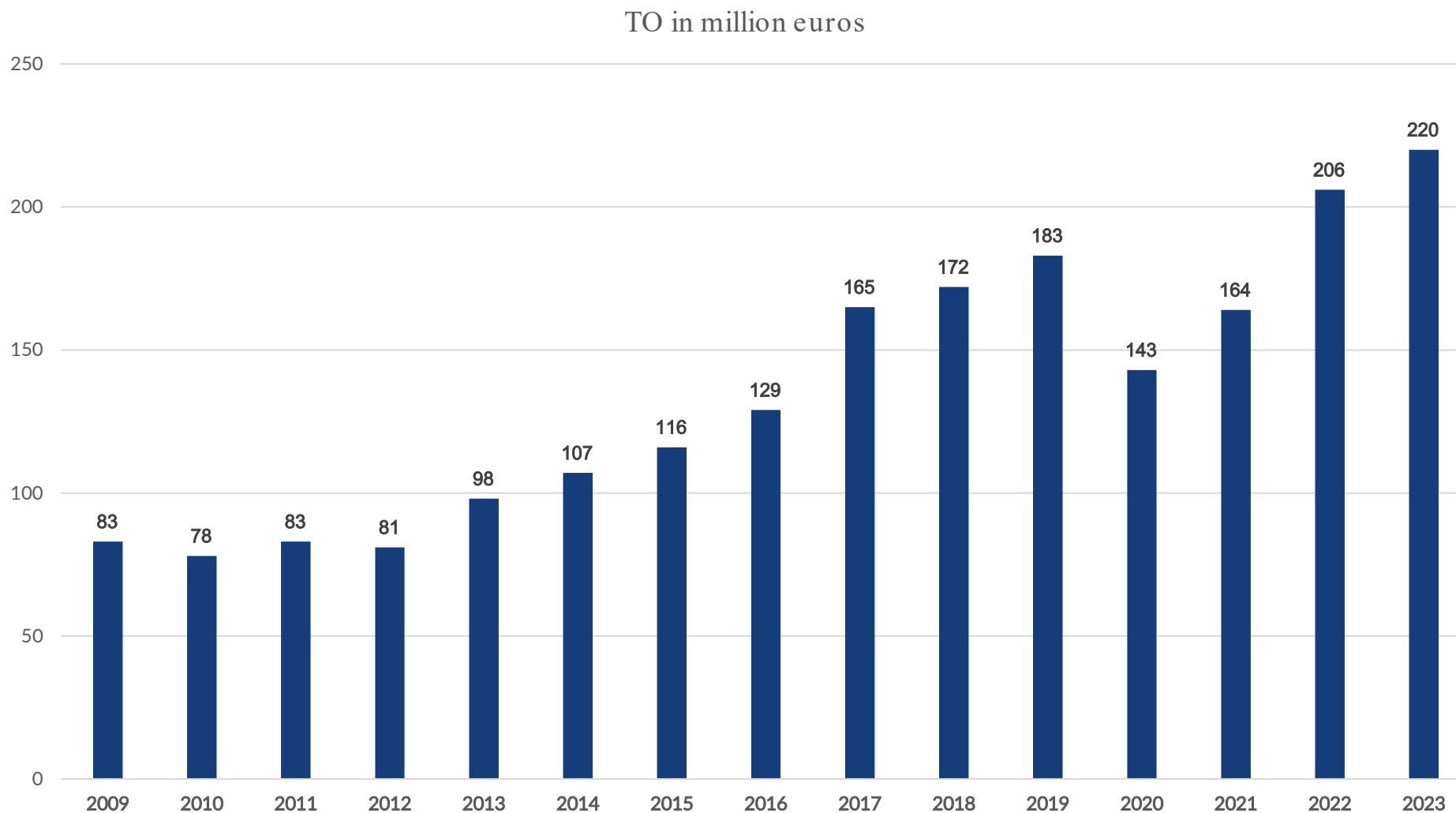
- Our parts and products can be found across major commercial airplane and automotive brands.
- We fulfil the high-volume requirements of car production as well as the stringent quality standards of the aerospace industry.
- Whatever the market to be served, our experience provides a sound base for any manufacturing project.



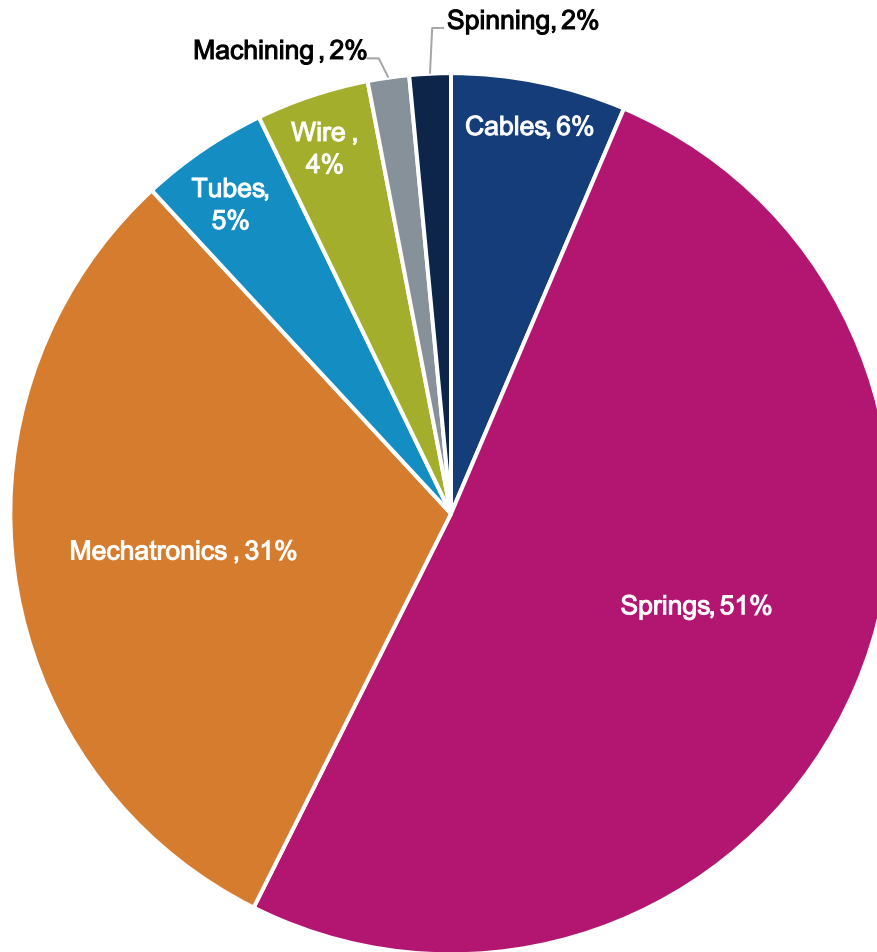




Turnover in M€



Turnover by technology (K€)



Springs: 105 M€

Mechatronics : 63 M€

Cables: 13 M€

Tubes: 10 M€

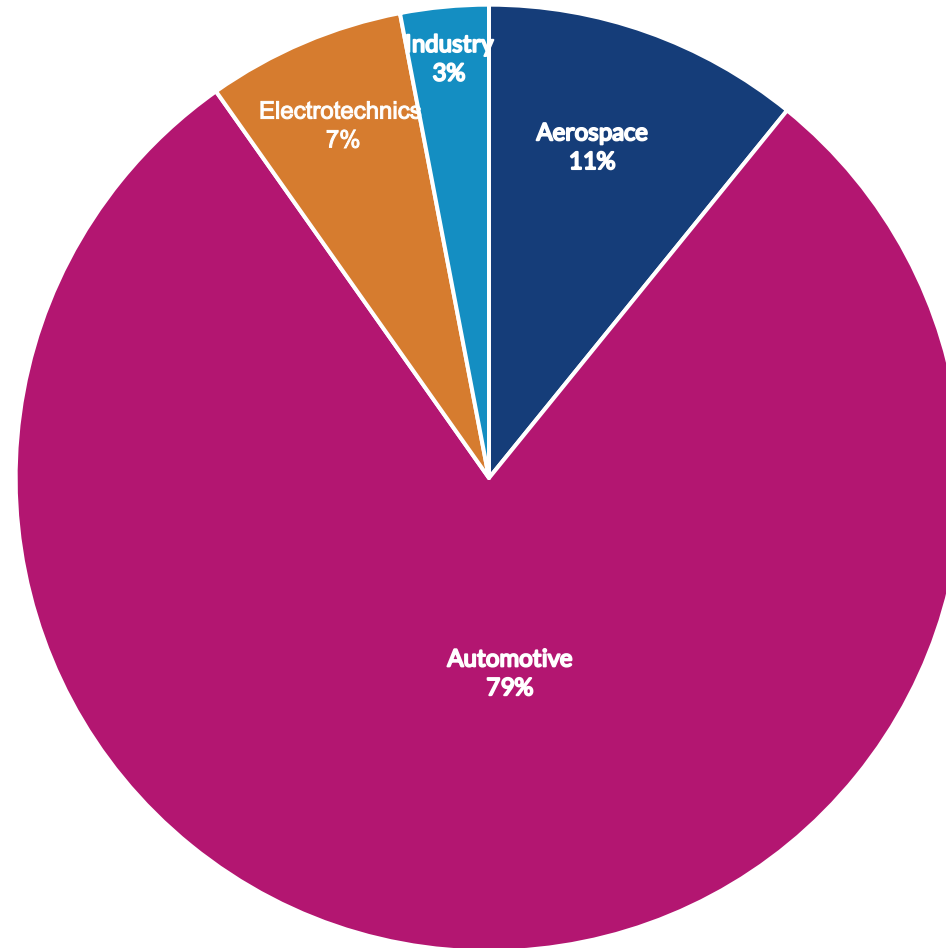
Wire: 9 M€

Spinning: 3 M€

Machining : 3 M€



Market share



Serving more than a thousand customers



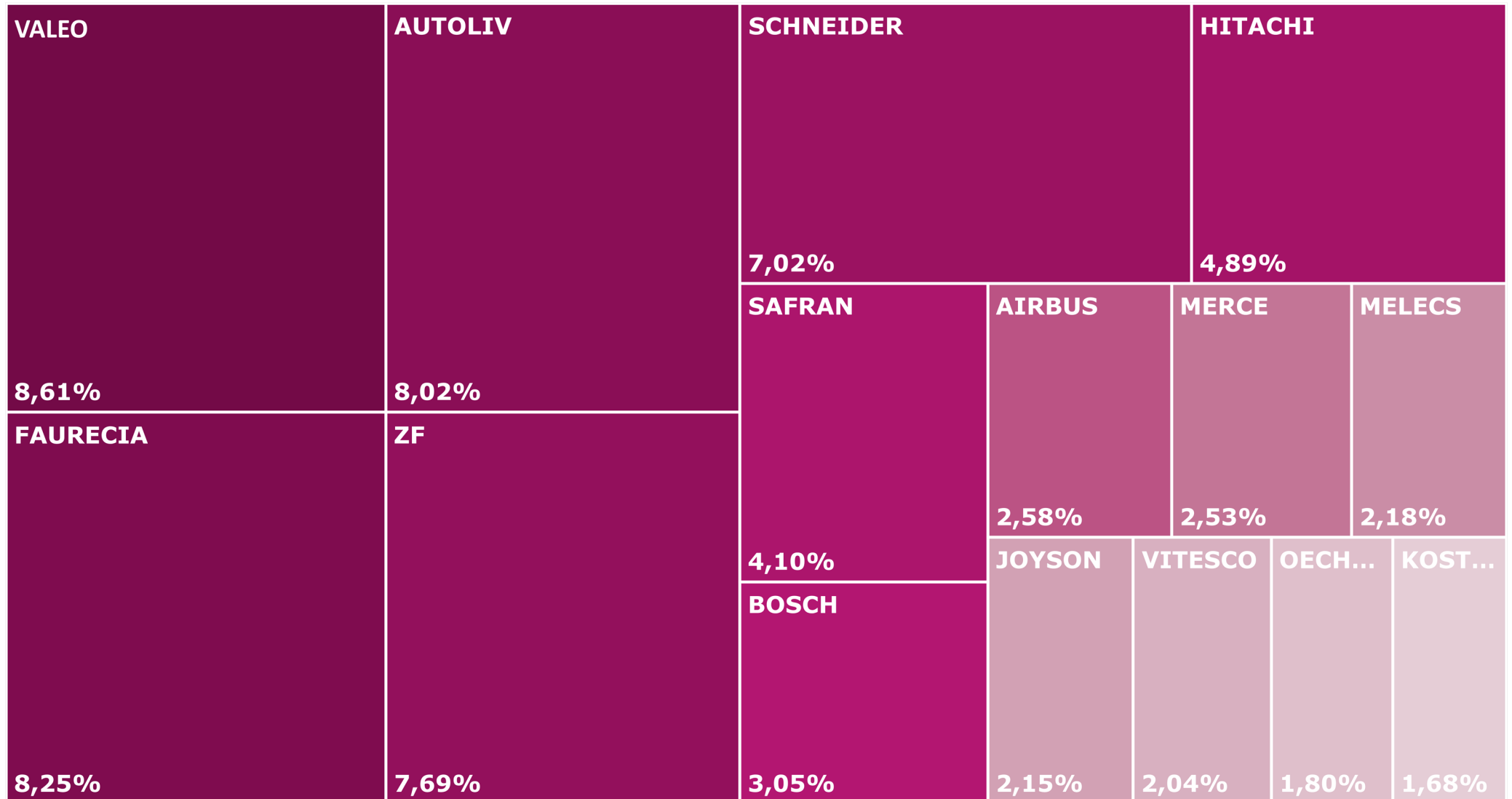
TOYOTA BOSHOKU



RENAULT



A balanced portfolio of key accounts



Vision and mission

Our Vision

- Changes in technology, society and the environment are transforming industries at a rapid pace and global scale.
- Agile suppliers with decentralized organization offer the required flexibility and strength to create solutions for the future.
- Unleashing talent by empowering our people is the heart of CGR's management philosophy.

Our Mission

- We design, coengineer and produce components, principally for the aerospace and automotive industry.
- We offer total control over the supply chain, from validation of raw materials, over development and qualification of prototypes, through to production and delivery on time.
- We share our expertise in metal transformation and process engineering to drive cost down and quality up.



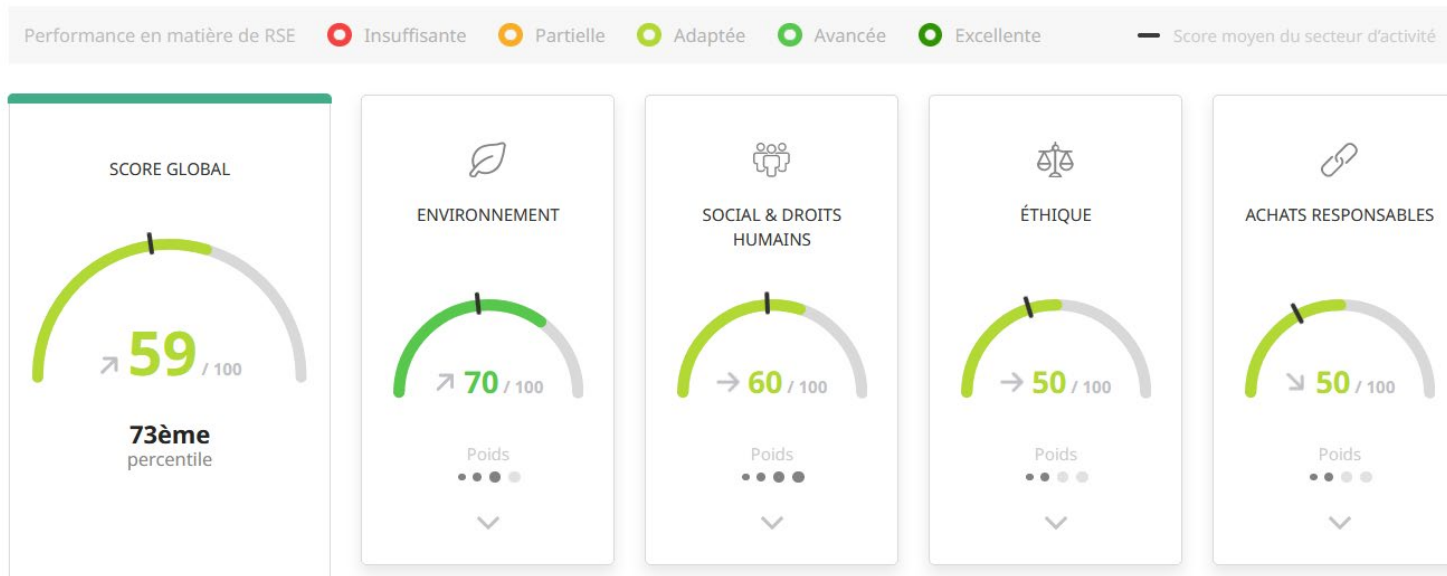
Environmental commitments



Carbone Neutrale (scopes 1&2) before 2030

First step for GHG emissions : -50% before 2025

Ecovadisnotation May 2022: **Target to be Gold before 2025**



Global presence, local production

10
countries

4
continents

>1500
employees



cgr-international.com



Aerospace



Mechatronics



Wire springs

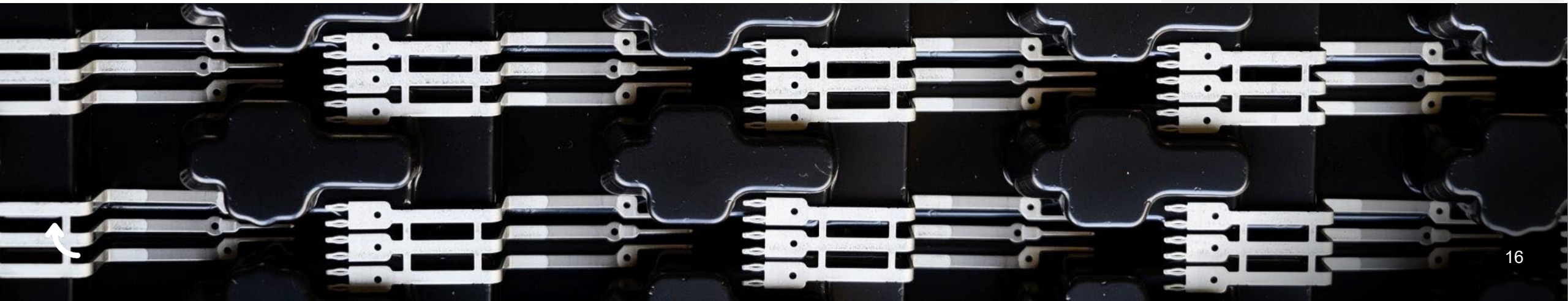


Cold forming



Flat springs

Markets served



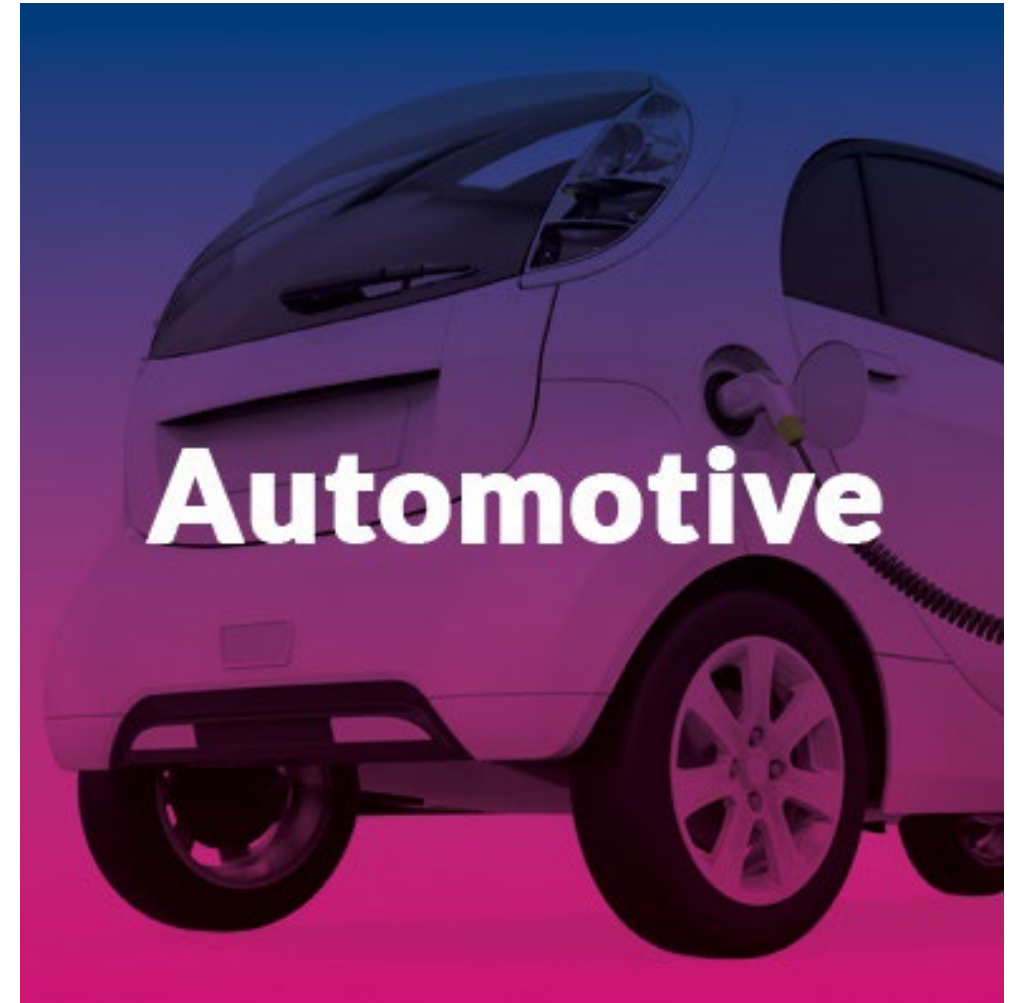
From design to production

- 5 dedicated factories
- Counter-expertise of incoming goods and seamless tracking
- Delegation of control granted by many clients
- Facilities certified according to EN/AS 9100, ISO 14001 and ISO 9001
- Finite element methods for static and dynamic design calculations
- Carbon steel, spring steel wire, stainless steel, nickelcobalt alloys, titanium alloys, copper alloys



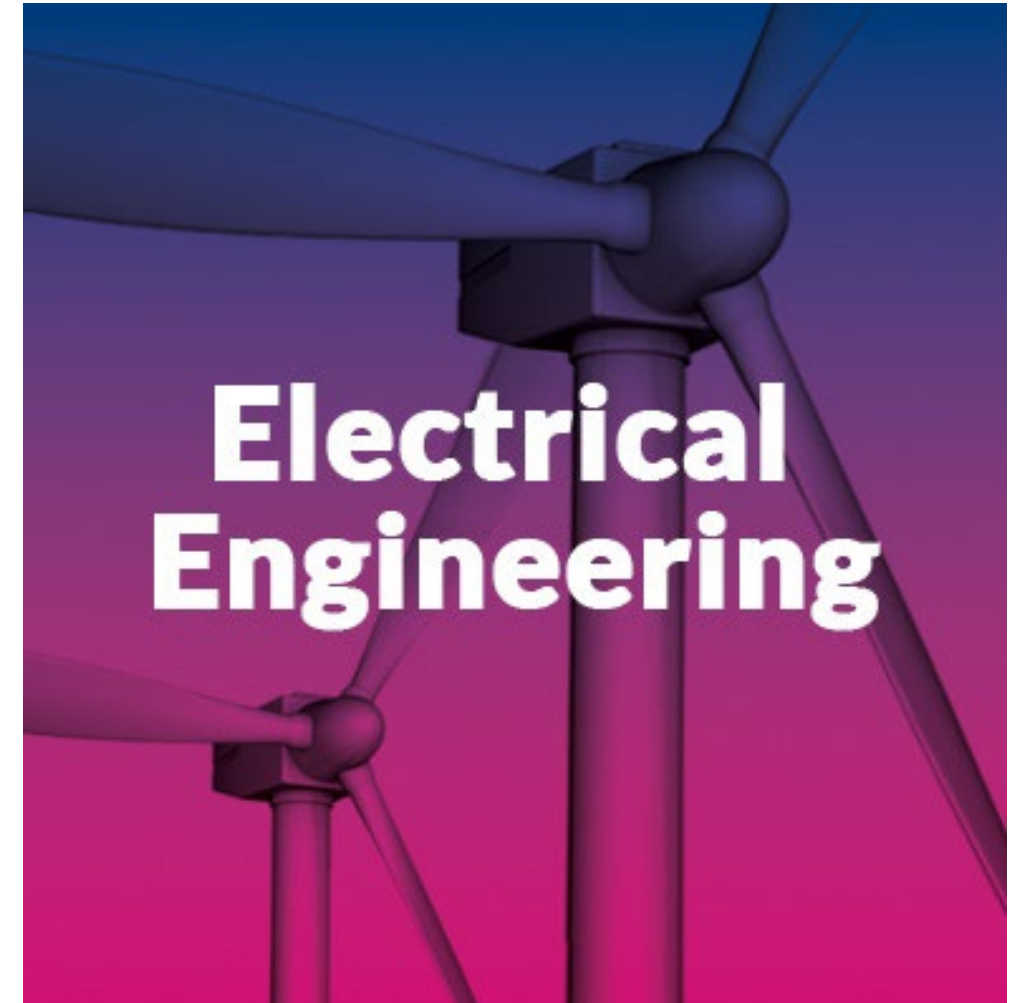
Consistent yield, just in time

- 15 factories worldwide
- Co-engineering, prototyping, testing and industrializing new solutions and designs
- Delivering high volumes on time with consistent quality and yield
- Wire springs, flat springs, cold formed components, overmolding and mechatronics
- Facilities certified according to IATF 16949, ISO 14001 and ISO 9001
- Patented press fit EloPIN connectivity



Quality and reliability

- 12 factories worldwide
- Metal forming, overmolding and automated assembly
- Electromechanical components and advanced subassemblies
- Multi -material process knowledge
- Micro -switches, switch disconnectors, thermal relays, surge protectors and other electrical equipment



Enhancing productivity

- 10 Factories
- Process knowledge including metal transformation, polymer injection and automated assembly
- Fulfilling high volume and high quality requirements
- For construction, railway, agriculture, energy, toys, medical devices and equipment, furniture, defense, luxury and more...



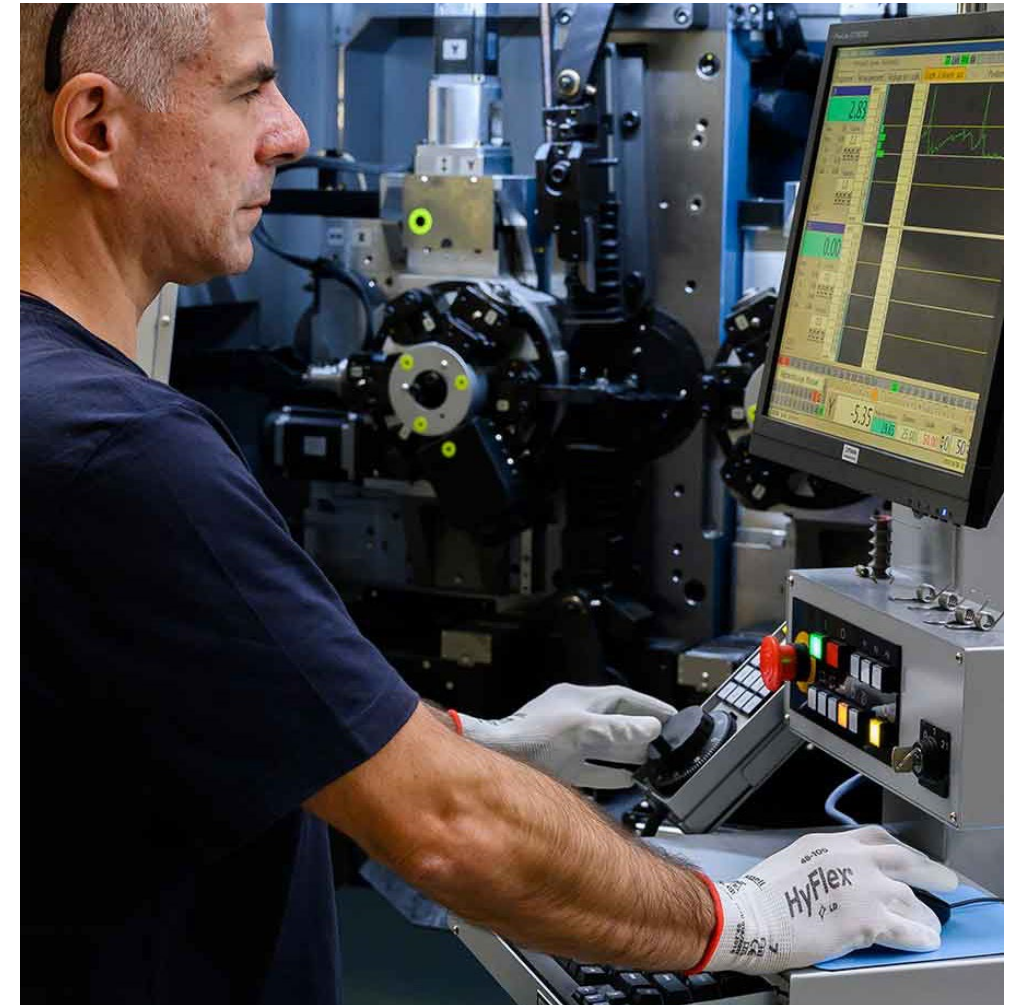
Technologies

03



An inclusive approach to manufacturing

- Cold forming
 - Flat springs
 - Wire springs
 - Cable crimping
 - Tube forming
- Stamping
- Metal spinning
- Overmolding & automated assembly
- Electroerosion (EDM) & tooling
- Additive manufacturing





Cold forming

- At 15 production sites on 4 continents, we cut, punch, laminate, weld and assemble a broad spectrum of parts according to client specifications.
- We employ latest technology to transform tubes , wires, flattened wires, cables and sheet metal made of steel, stainless steel, and a large variety of non-ferric alloys.
- We apply thermal treatments as well as a broad range of surface treatments and coatings.
- Our industrial expertise covers production and assembly of wire springs, flat springs, welded seating supports, exhaust system hooks, seat belt cables, busbars, pressure tubes, wiper arms and many other parts.



Cold forming



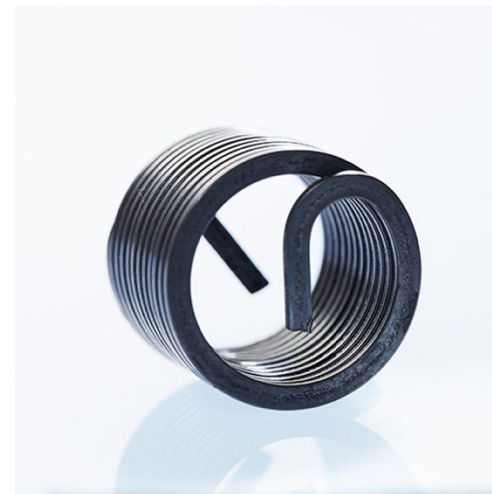


Cold forming / flat springs





Cold forming / wire springs



Cold forming / wire springs



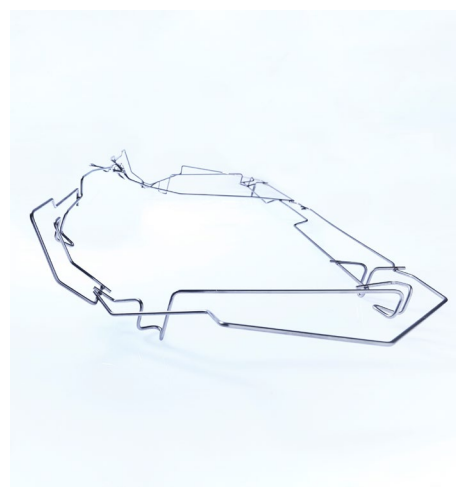
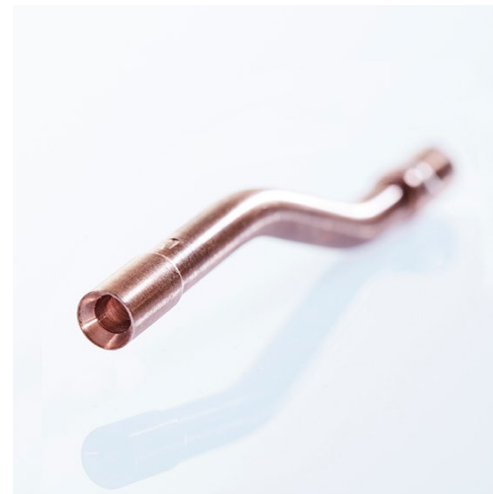


Cold forming / cable crimping





Cold forming / tube forming





Cold forming / tube forming





Stamping

- Stamping is one of CGR's global core competences.
- We produce functional components by progressive bending, punching and cutting metal strips.
- Inline process control ensures consistent quality.
- The resulting parts serve as clamps, fixtures and connectors.
- Our stamped connectors are the basis for overmolded and assembled parts that can be directly integrated in our clients' products.
- CGR is a main supplier of patented press-fit EloPin® connectors for printed circuit boards (PCBs).



Stamping



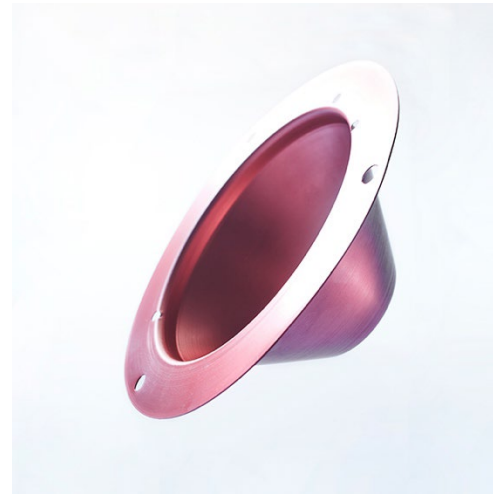
An introduction to CGR

Metal spinning

- Metal spinning enables production of pieces in small and medium series that are otherwise hard to manufacture.
- Objects can be built from one piece of material, without seams, this withstanding higher internal or external pressure.
- Metal spinning therefore is an ideal method for the aerospace industry and special applications.
- CGR offers its renowned expertise in metal spinning for producing parts from 3 mm to 800 mm in diameter and a thickness of 0.5 mm to 6.0 mm.



Metal spinning

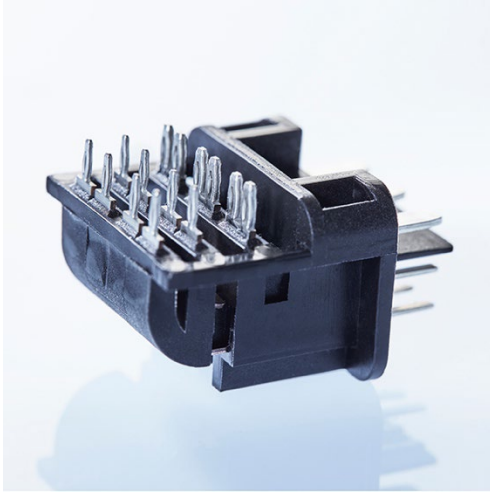


Overmolding and automated assembly

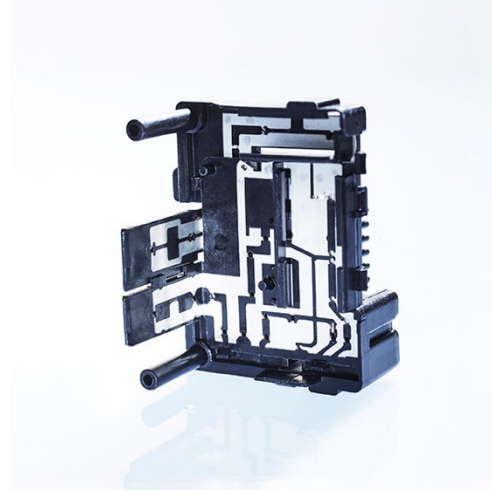
- Metal overmolding is an ideal complement to stamping.
- Our manufacturing sites operate state-of-the-art horizontal and vertical injection presses with different tonnages from 40 to 600t.
- Reel-to-reel overmolding is one of our specialties.
- Further integration includes, for example, membrane welding and assembly of electronics.
- Our automated production lines for high-volume production of parts and sub-assemblies employ latest 6-axis and cartesian robotics, machine vision and artificial intelligence.
- Optical quality control and inline physical and electrical testing capabilities enable zero defect rates.



Overmolding and automated assembly



Overmolding and automated assembly





Electro Discharge Machining (EDM) and Machining

- Our specialized EDM production units make tools, prototypes and small series by wire cut, die sink and EDM hole drilling
- Aerospace parts are produced and assembled with CGR springs to deliver small assemblies for Aircraft applications
- Raw materials include steel, aluminum, carbide, chrome cobalt, copper, graphite, Inconel, inox, titan and alloys
- Wire diameters range from 0.07mm to 0.33 mm
- We have the latest machines and techniques at hand to build our own precision tools for stamping and progressive die.



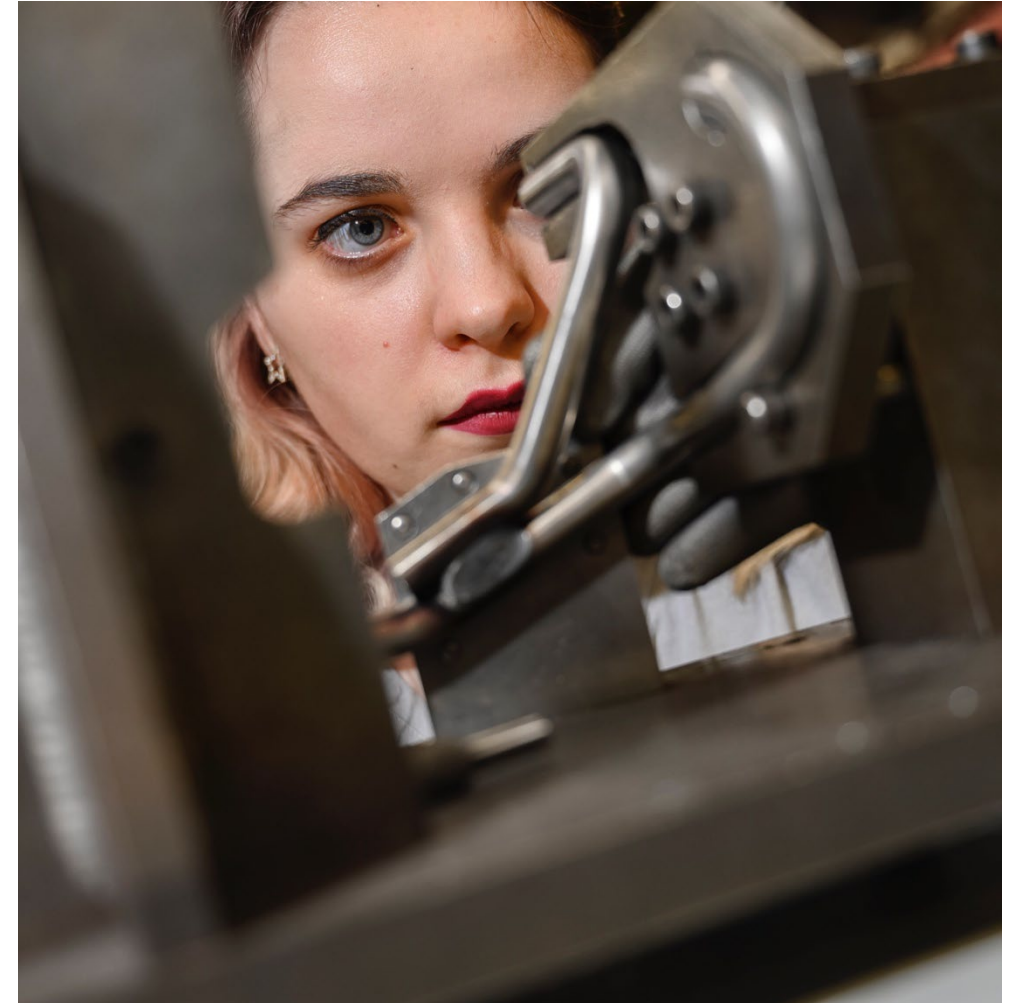
Form your world

04



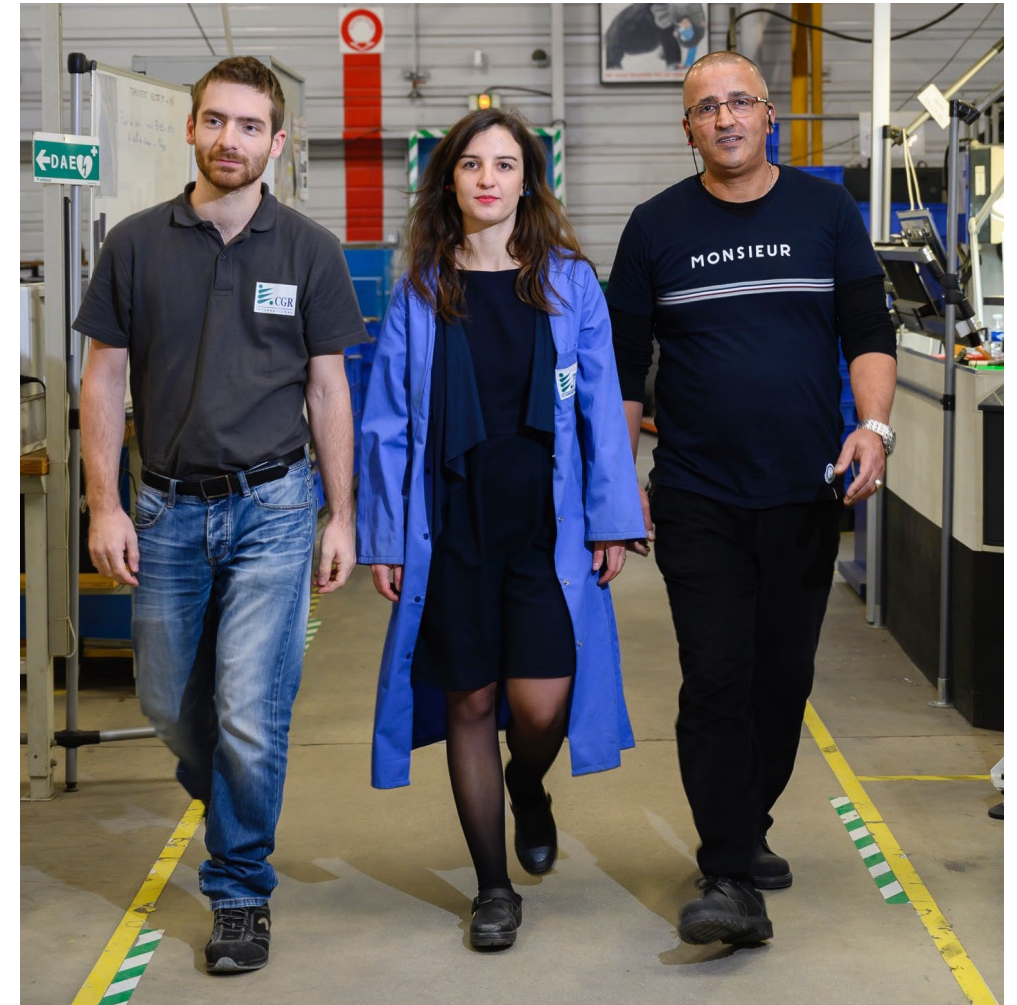
Form your world

- ‘Form your world’ is the baseline that accompanies CGR’s new visual identity
- Much more than a slogan, it resonates with our core activity: forming and transforming metal.
- It is also a call to action that summarizes our attitude: assume responsibility, take action, drive change, make this world a better place.
- We are united by values that have been chosen by our people:
fairness, respect, honesty, solidarity and responsibility

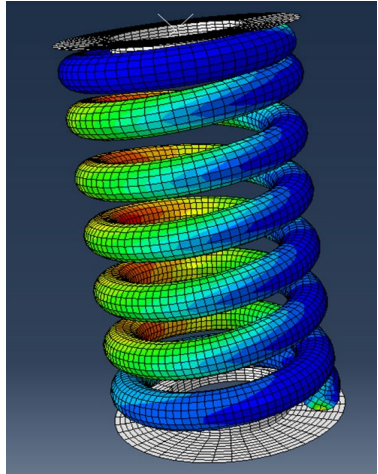


Social and environmental responsibility

- Our CSR policy relies on three main pillars:
- **Governance and ethics**— we fulfill our missions with integrity and respect at all time.
- **Human capital**— the women and men at CGR are our primary stake, far beyond elementary compliance with legal obligations.
- **Environmental performance** — we strive to continuously improve our environmental footprint and encourage our partners to act alike.



Co-design and co-engineering

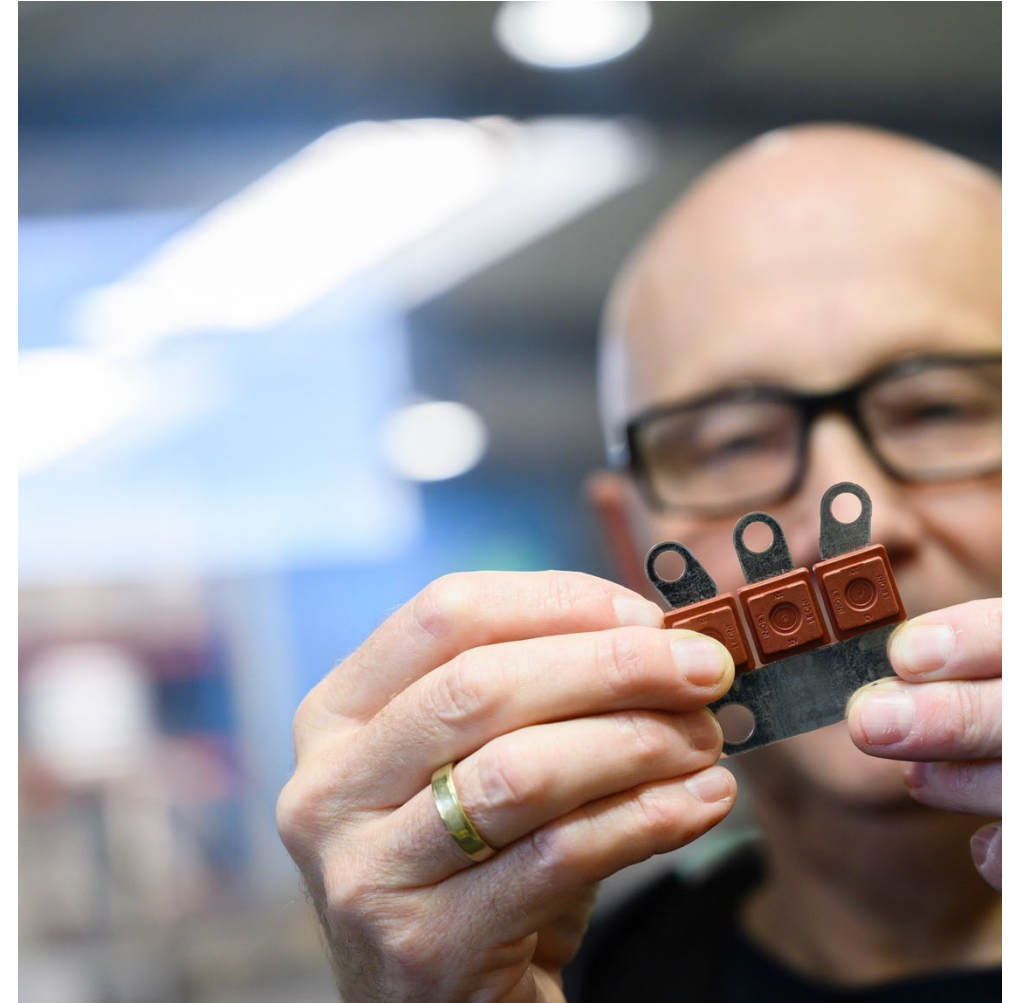


- We help clients shorten time to market, increase production yield, optimize cost and enhance quality.
- Our Lab STRAIN (Spring Technology ReseArch Institute) has been set up in close cooperation with the Clement Ader Institute (CAI) and the National Institute of Applied Sciences (INSA) in Toulouse.
- STRAIN offers CGR's industrial clients leading-edge R&D capacity which is unique in its genre.



Kaizen attitude

- 5S and Quick Response Quality Control are our primary industrial methods to ensure every component matches specification.
- We deploy lean manufacturing methods including Total Productive Maintenance, Single Minute Exchange of Die, Plan Do Check Act, and 8Do.
- We are certified ISO9001, IATF16949, EN/AS9100 and ISO14001.



Autonomous production units

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