

LESJÖFORS

Springs & Pressings

**Global mind.
Local heart.**



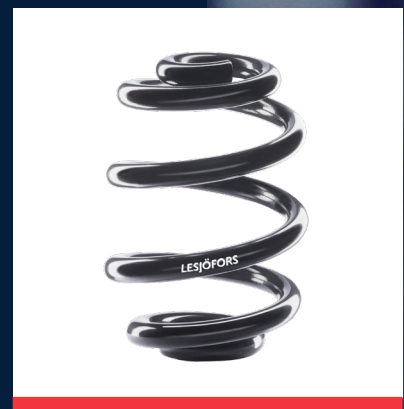
Look to the future with Lesjöfors.

Lesjöfors is a global manufacturer and supplier with the market's widest range of springs, gas springs and strip components. Our success is the result of years of dedicated work and research into innovative problem solving across a range of major and diverse industries. Our experience, along with our unique skills, access to resources and focus on continuous development processes delivers high tech customised solutions for every need.

Meet the future with strengthened competitiveness and allow our experienced staff to become part of your product and process development with everything from advanced calculations and design to manufacturing.

At Lesjöfors you can be certain of meeting people with leading edge, high-tech skills whether your requirement is low volume bespoke precision work or high volume standard parts.

Welcome to Lesjöfors.





Springs.

Lesjöfors has long and extensive experience in the manufacture of springs and constantly gives priority to technological developments in this field. Our main competitive advantages are our wide product range, high-quality production, leading-edge technical skills and superior customer support.

Our wide product range is unique in the spring industry and has been developed to give our customers the option of single sourcing with us. Our springs are found in almost all industrial sectors, for example power generation, paper and pulp, petrochemicals on and offshore, automotive, infrastructure and consumer electronics.

At Lesjöfors we work with our customers to find the most

effective way to make the product available in the optimum quantity, then manufacture and deliver on time. We stock and distribute all kinds of springs and can satisfy any customer order method.

Our most frequently manufactured springs are compression, torsion and tension springs, in addition to wire components and flat springs from strip. We

possess expertise and experience in different spring materials e.g steel, stainless steel, super alloys (used in springs designed for high temperature and aggressive corrosive environments), titanium and even aluminium. Our manufacturing equipment is the most up to date currently available, which enables us to maintain the highest level of quality and productivity into future.





Clock springs

Cold forming maximum thickness 5 mm, hot forming maximum thickness 12 mm



Compression springs

Cold and hot coiling from 0.03 - 65 mm wire diameter



Constant force springs

For window balancers, counter balancers, point-of-purchase shelving, displays, etc.



Disc springs

In spring steel, stainless steel or super alloys depending on your requirements



Garter springs

Circular rings made from a coiled helical spring



Power springs

For winding cables, hoses, safety belts with maximum strip thickness 2 mm



Snap rings

Individual cutting methods and flexible packaging



Door spring

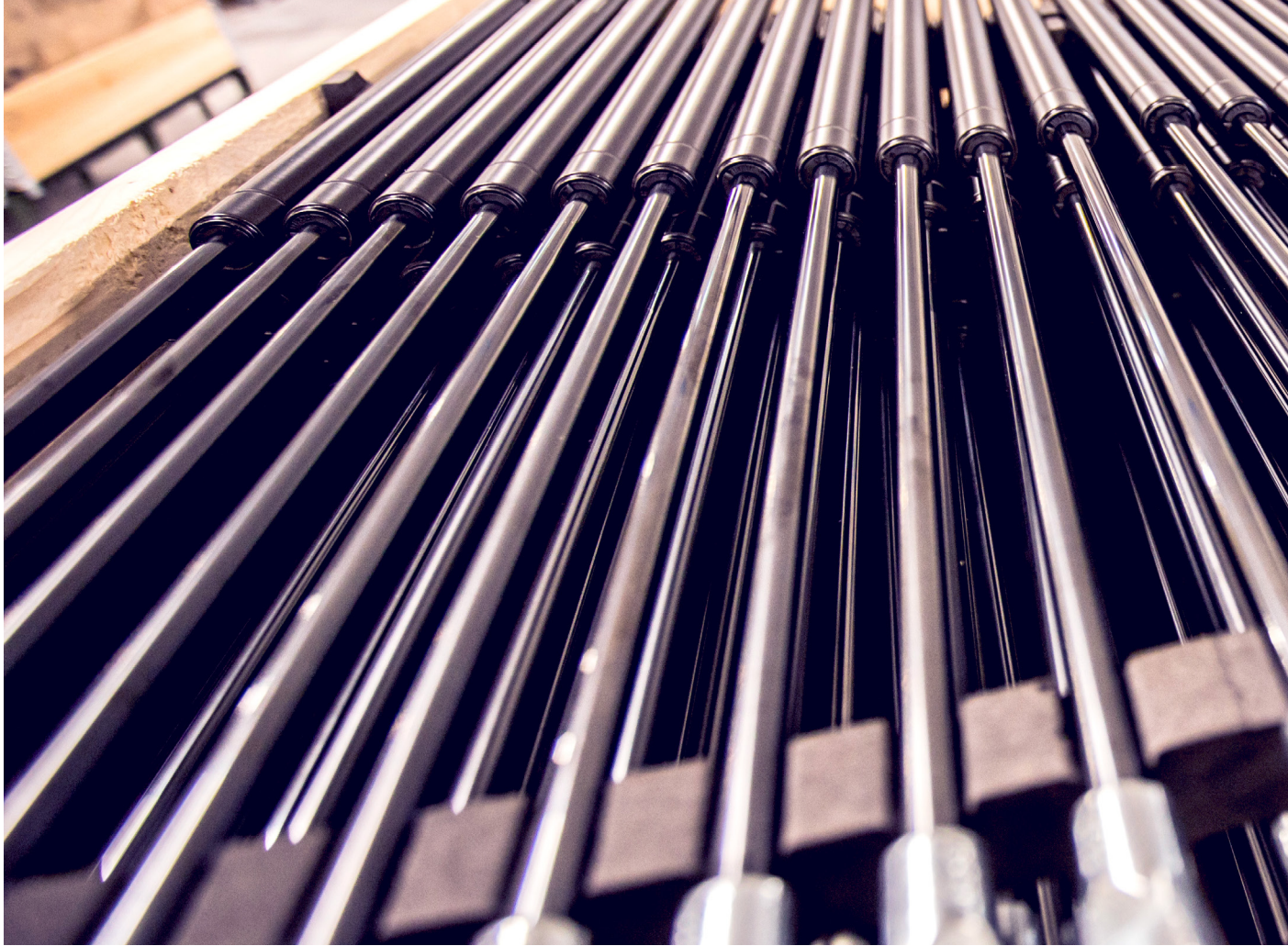
Torsion & tension spring systems for industrial & residential overhead doors



Scan to see all our products
Springs

Facts

- No other spring manufacturer in Europe, China and USA can offer the same range of in-house manufactured components from so many different types of materials.
- We offer flexible manufacturing processes from single items to high volume production.
- With close cooperation with our customers in the product development process, we can lower costs and reduce impact on the environment – under or over engineered products can be costly for all concerned.
- The Lesjöfors Group manufacture compression springs, tension springs and torsion springs in dimensions from 0,03 to 65 mm, which covers the vast majority of our customers' needs.
- The Group has close links with suppliers, standard institutes and universities, contributing to problem solving, technical experience and expertise we can offer.



Gas springs.

Regardless of whether you need a quick delivery of standard gas springs or a special design, Lesjöfors is able to supply the solution you require.

Gas springs with their unique spring characteristics and controlled movement can help you in a number of applications. Often they fit excellently when there are special demands on ergonomics or operator safety.

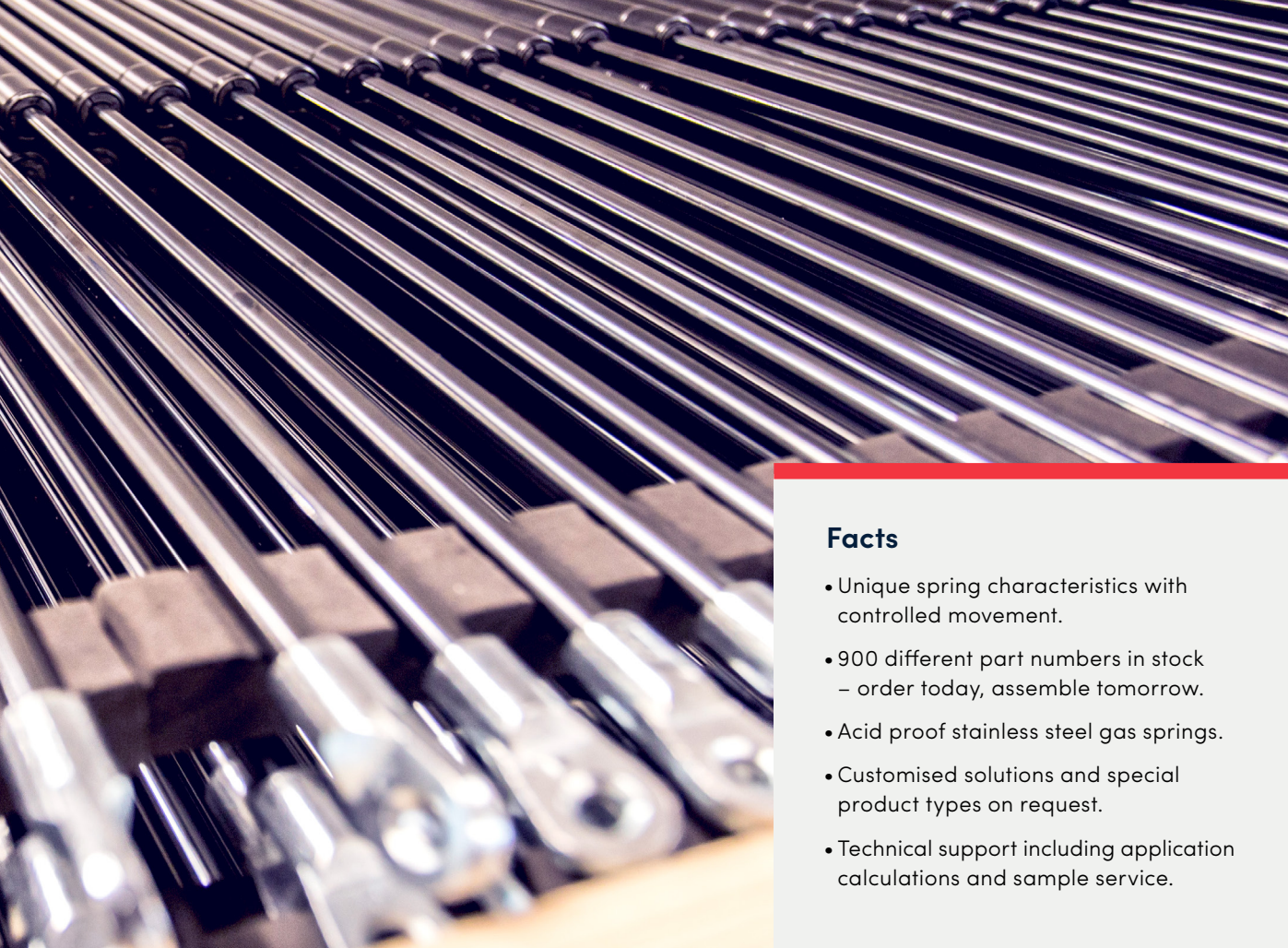
Our standard range of gas springs has 900 different part numbers with around 100 end fittings and accessories.

As a result we can offer extension forces between 10 and 2000 N

and strokes between 20 and 500 mm directly from stock, which confirms our unique ability to meet immediate demands within various applications. Some of these may require features such as stainless steel, force reduction, safety lock function or stepless locking function. We can offer them all.

If our large standard range does not satisfy your specific requirement for length, force, damping ability, surface treatment, end

connection etc we will be happy to support you. We have decades of experience in choosing the right gas spring for various needs. We will be able to assist with our sample service and technical advice from your early product development phase all the way to optimised delivery schedules for your mass production.



Facts

- Unique spring characteristics with controlled movement.
- 900 different part numbers in stock – order today, assemble tomorrow.
- Acid proof stainless steel gas springs.
- Customised solutions and special product types on request.
- Technical support including application calculations and sample service.



Traction gas spring

Standard or special designed



Hydraulic gas spring

Standard or special designed



Dynamic gas spring

Standard or special designed



Lockable gas spring

Standard or special designed



Stainless steel gas spring

Standard or special designed



Gas springs for tooling

Nitrogen gas springs for metal stamping industry

With 900 different gas springs in stock, we believe we have the widest standard range in Europe



Scan to see
all our products
➔ Gas springs

Stampings and pressings.

Lesjöfors is constantly working to improve our manufacturing portfolio, techniques and tool design, always taking each individual customer's requirements into account. Superior engineering combined with modern production processes result in the best environment for high-quality, cost effective products.

We are happy to assist in producing prototypes, selecting the optimum material, processing and surface treatments for your specific product. Our development engineers can give support with advanced technical calculations such as force, relaxation and fatigue.

Lesjöfors offers cost effective production irrespective of whether the order is for 10 or 10 million components.

With highly automatic processes and tools, such as multislide machines from Bihler, Finzer and Latour or high speed stamping presses such as Bruderer & Mabou, we can guarantee superior products.

If you require smaller batches with fast turnaround, we can support this with standard tooling, manual forming, laser cutting and wire erosion. Lesjöfors also has manufacturing units in Latvia and

China, which can provide very competitive production.

Lesjöfors is an innovative problem solver in the spring and pressings industry





Bending parts

Stamped/bent parts to your individual requirements



Bushings

Produced with multislide bending machines or progressive tools



Circlips & Locking Rings

Different materials with individual follow-up processes up to 2 mm thickness



Deep drawn parts

Deep drawn parts produced in progressive or transfer tool solution



Flat springs

We manufacture flat springs in processes ranging from manual to fully automatic



Stampings

Thickness 0,05 mm – 5 mm including qualified tool development



Washers

For axial force with outer diameter of 9-250 mm



Scan to see all our products
➔ **Stampings/Pressings**

Our main competitive advantage is strong technical competence, qualified tool development, low cost production and good service.

Facts

- Lesjöfors manufactures strip components in dimensions from 0,025 to 6 mm in thickness.
- Lesjöfors has an extensive range of materials in stock and offers rapid prototyping and product development for complex components reducing development times TTM yielding superior product Quality.
- Lesjöfors specialises in products with complex geometries in high strength, conductive and thin materials.





Metal belts.

Metal conveyor belts suitable for numerous applications. For metal conveyor belts, safety shields, architectonic mesh and other applications of woven metal wire and strip steel, we are the right place to come.

Many industries are using metal conveyor belts for transportation of products in and out of different processes. Lesjöfors offers a wide spectrum of metal belts for many applications.

Highly specialized manufacturing

The Dutch Lesjöfors company Tribelt specializes in developing and manufacturing metal conveyor belts. For more than 70 years, the company has solved problems for customers in many

different fields across Europe. We also manufacture sprockets, customized for the design and in the number your application requires, it's tension forces and surrounding environment.

Support throughout the whole process

Thanks to many years of experience and specialized manufacturing skills in metal conveyor belts, we serve our customers through the whole process with advice, design,

customization and first-class support. We are proud to offer a tender within 24 hours in most cases.

Rapid service and support

Time is money and production stoppages can be costly. Our high-quality metal conveyor belts are very reliable, but sometimes problems occur along the way that must be solved. We are only a phone call away for service and support that can avoid a long disruption.



Facts

- Food industry – bread/bakery, vegetables/fruit, meat/fish/preheated meals etc.
- Solar and thermprocesses
- Packaging industry
- Washing and cleaning
- Design and safety
- Other applications



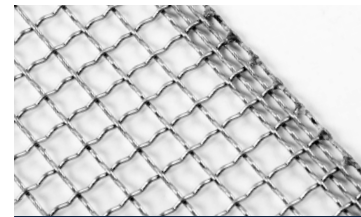
Balanced weave belts

A woven belt existing of left and right spirals twined to each other by means of undulated cross rods.



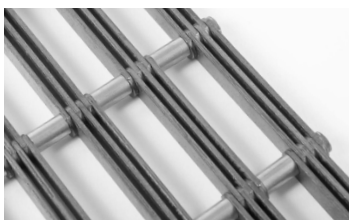
Tri-flex belts

A TRI-Flex belt is constructed from 3 components connected to each other by means of smooth cross rods.



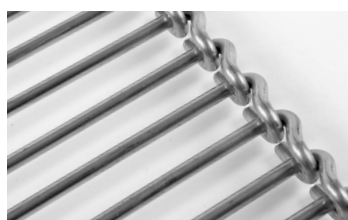
Woven mesh belts

The woven mesh baking belt is a belt that consists of round, flattened, or undulated wires woven into one another.



Platelink belts

The plate link belts arise due to a succession of bar links and filler rollers.



Ladder belts

The ladder belt consists of a succession of one and the same component. This creates a robust, open belt.



Scan to see
all our products
➔ Metal belts

“With more than 70 years of experience and the present craftsmanship, we gladly think along with our principals from the initial stage.”

Stock springs.

With our structured selection of components held in stock, we make life easier for our customers. 'Simple, safe and cost effective' are key words in our promise to the market.

- Lesjöfors' wide selection ensures that in most cases our customers find a standard spring that fits their needs.
- Your standard spring can be delivered tomorrow thanks to our efficient logistics.
- Our experience in logistic management makes it possible to deliver the majority of our range in larger volumes at short notice.
- You can rely on the guidance of our highly skilled personnel to get the correct spring for your requirements.
- Our unique spring catalogue makes it easy for you to find the right standard spring yourself.
- The search engine on our website makes your search easy and fast.
- Almost all items are available as CAD models, which can be downloaded for free.
- You have many options when ordering, from a direct phone call to EDI solutions.
- Lesjöfors' own manufacturing combined with a wide network of suppliers guarantee superior quality and secure deliveries.



Contents in the Spring Catalogue

Wave springs – multi coil wave springs are new to the standard selection. They are made from flat spring materials and are suitable for use in applications where a low mounting dimension is required. A reduction in mounting dimension of up to 50 % can be achieved.

Compression springs – you will find an extensive selection of the most common standard springs on the European market. This segment also contains tool/die springs according to ISO 10243.

Tensions springs – a unique dimension standard for special loops and standard springs ensure a large assortment. Most of the items are available in stainless steel.

Torsion springs – we offer both double and single torsion springs in a program that covers most applications. All items are available in stainless steel.

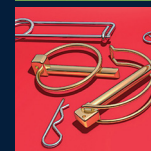
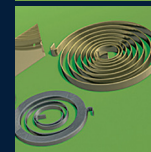
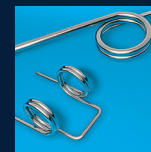
Disc springs – the selection is based on the European standard DIN 2093, combined with a wide range of disc springs in stainless steel.

Constant force springs and spring washers – we provide a wide range of clock springs and constant force springs in combination with clever fittings and slide bearings.

Locking springs, pins, spring u-nuts and clips – a large selection of the most common spring locking components.

Gas springs – a complete assortment of gas springs with strokes up to 500 mm. Most items are available in stainless steel. Models with force reduction and integrated safety locks are new in our standard selection.

Gas spring end fittings – loops, clevises, ballcaps and brackets are available in different designs and materials. Most items are available in stainless steel.



Lesjöfors is one of the oldest and most experienced spring suppliers in the world



Automotive aftermarket.

Lesjöfors Automotive is a specialised, highly skilled manufacturer and stockist of suspension springs. We offer the widest commercially available range of quality assured aftermarket springs. In addition to our own production and wide product program, our main competitive advantage is our efficient logistics and superior customer service.

Lesjöfors Automotive specialises in the aftermarket for passenger cars and other vehicles. We are unique, since we are both a manufacturer and a stockist. We control the process from spring calculation to manufacture, stocking, logistics and service. Within Automotive we possess a deep competence and large capacity in both production and application.

Lesjöfors provides a complete range of chassis springs from our own production. Our sport spring

kits are TÜV approved and developed for Nordic road conditions. Our range of gas springs covers just about every car model on the European market, and we offer a complete range of leaf springs for light transport vehicles.

Our customers are mainly national distributors of vehicle spare parts. Distribution is carried out from our logistic centres in Sweden, Germany, United Kingdom and Russia.

With the widest product range of vehicle springs – Lesjöfors is often the most natural choice

In constant motion.

The Lesjöfors group is continuously improving. In close cooperation with our customers we constantly evolve. As their leading spring supplier our globally recognised customers challenge us to extend the boundaries of our technical expertise everyday. By moving forward area by area and by setting in stone action plans our ultimate objective is to provide an unrivalled service for all our customers.

Quality

Our management systems are third party approved according to ISO 9001. Some subsidiaries are also third party approved according to IATF 16949, which is a quality standard requirement for automotive industry suppliers. Our management systems are designed to satisfy the customer's product demands and expectations on the supplier partner.

Environment

Lesjöfors and all its subsidiaries fulfil the laws and regulations from the authorities. The environmental focus is to work constantly to eliminate any impact on the environment. Consequently, we have been third party approved for a number of years to the environmental standards in ISO 14001. The environmental control and improvement are part of

our management systems and designed to identify significant environmental considerations, evaluate the situation and define environmental goals and to take actions.

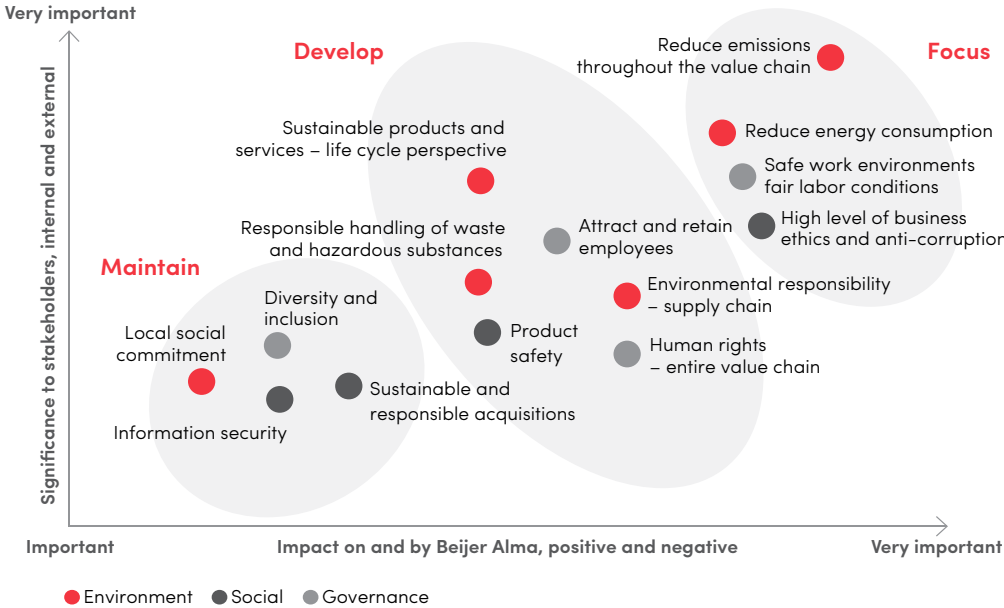




Sustainable development.

Our focus areas for sustainable growth

Lesjöfors Group has an impact on people, society and the environment. All of our stakeholders have opinions and expectations when it comes to how our operations are conducted. Our success depends on our ability to create value that meets the needs of our stakeholders while also taking financial, environmental and social consequences into consideration. The materiality analysis and stakeholder analysis thus serve as a combined sustainability agenda. The updated materiality analysis from 2021 shows the most important areas to address.



Sustainability in every step

To become the most sustainable springs and pressing company in our industry we need to ensure that sustainability is integrated in all the many small steps of our daily operation and that is defined per process

and function. We also need to define how our business can work together with corporate, government, and non-profit actors to bring about large-scale change in the sustainability space.

- **Product development**
- **Communication & Marketing**
- **Production**
- **Raw material suppliers**
- **Usage and service**
- **Reuse and recycling**

Technical development.

The performance of your spring or strip component is crucial for the function of your application. To determine the product's performance, Lesjöfors makes calculations and simulations that later are verified through measuring and testing. We have the capacity to calculate, measure and test all types of springs, from very small and thin strip components to several hundred kilo heavy coil springs.

Complete development partner

Lesjöfors' wide network of product and manufacturing science includes fields as material, surface treatment, cosmetics, dimensioning, manufacturing, testing and quality assurance. We cooperate with the leading material and alloy suppliers in the world, which gives us access to the best knowledge of material qualities. We use leading-edge methods to support you with calculations and dimensioning for your specific requirements.

Function and reliability

The selection of the optimal material and surface treatment for your product is dependant on factors as working temperature and risk

of corrosion etc. Lesjöfors' spring experts give you advice and recommendations for the best function of your component.

Examples of spring materials that we work with:

- Cold drawn low-alloy steel
- Quenched & tempered spring steel
- Stainless spring steel
- Copper alloys
- Super alloys
- Titanium alloys

Tension, compression and bending loads are together with torque important parameters for the function of springs. Fatigue strength with high-safety is especially important to dynamic working springs. Relaxation or

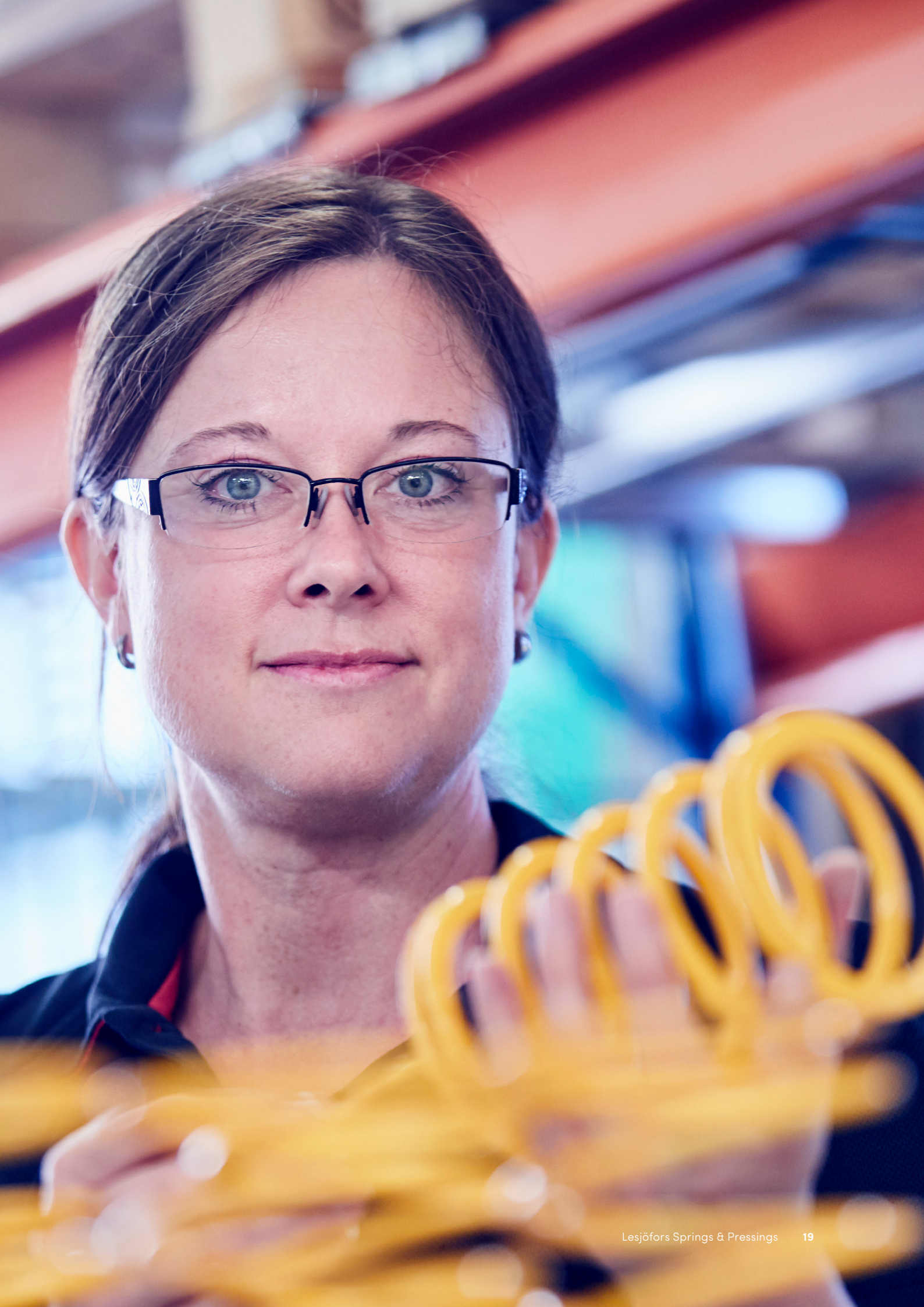
creep is often important for static loaded components. Mechanical qualities such as wear resistance, surface structure and friction are important to some components. For other components, electrical qualities such as conductivity and contact resistance are significant.

As your partner in a development project, we contribute with specific competence about the product, its qualities and manufacturing.

Lesjöfors is a knowledge based company within the spring and pressings industry

Facts

- Lesjöfors measures and tests springs and strip components at at our locations in Europe, China and USA.
- Lesjöfors employs the best highly skilled and experienced engineers and spring experts that work with technical service and customer projects.
- Lesjöfors has the capacity to measure and test the performance of all products in our program.



Lesjöfors worldwide.



LESJÖFORS
Springs & Pressings

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