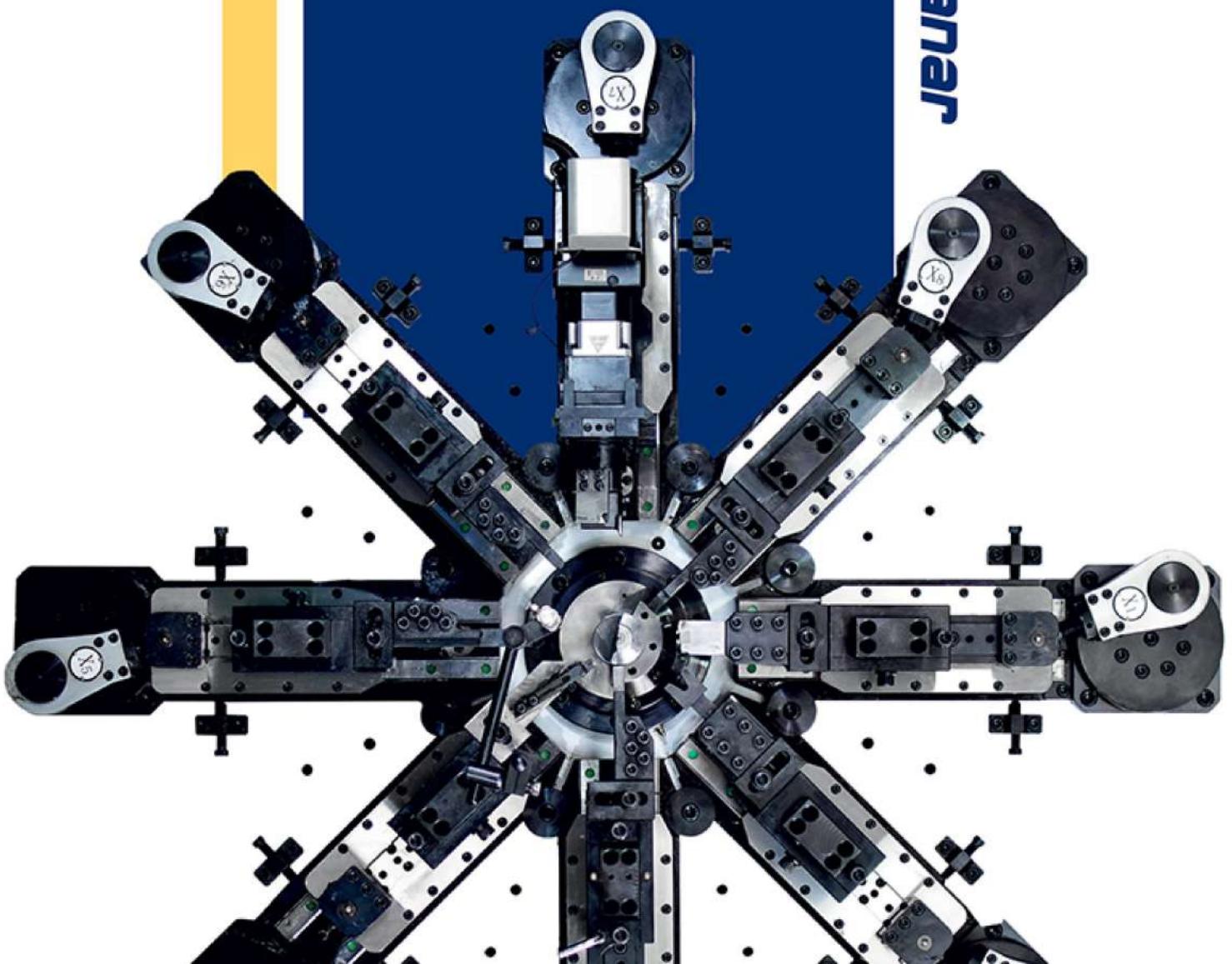


*Chalak Fanar*

Spring Production

*Chalak Fanar*





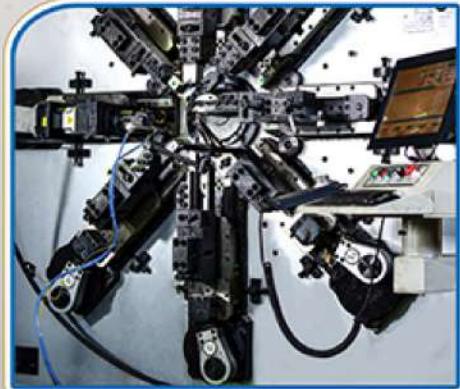
### History

Chalak Spring Sepahan Company was initially founded by Mr. Asghar Ebrahimi, who began with a traditional workshop. In 1986, Mr. Ebrahimi took significant steps toward growth and excellence by establishing Bohler Spring Company in Isfahan, transitioning from traditional to industrial production. The employment of experienced and dedicated experts transformed Bohler Spring Isfahan into a leader in the country's spring industry.

The company's prominence further increased with the acquisition of world-class machinery, training of specialists at reputable foreign centers, and equipping its laboratories with advanced tools. Additionally, the recruitment of consultants and lecturers from top domestic and international institutions helped train quality control personnel. The establishment of a specialized unit for personnel training and the development of a proprietary method for converting wire sizes to company standards led to the rebranding of Bohler Spring Isfahan to Chalak Spring Sepahan.

With over 40 years of experience, Chalak Spring Sepahan Company specializes in producing compression and tension springs, belt plugs, and coil springs without dimensional restrictions. The company prides itself on its excellence in design, manufacturing, and after-sales service. Our esteemed clientele spans various industries, including food, household appliances, gas production, electrical and electronic, railway, oil and gas, textile, and agriculture.

The motto of Chalak Spring Sepahan is: "With all our efforts for quality, we are with the consumer."





### Quality Guarantee

The Quality Assurance unit at Chalak Spring is dedicated to achieving a zero-defect production system and enhancing product quality. Our team of experts employs the most advanced laboratory tools and prioritizes continuous training to protect customer interests and create value. Our commitment to quality is demonstrated by our ISO 9001 certification, and we are actively working towards achieving ISO 45001, ISO 10004, and ISO 17025 certifications.



### Key Priorities

Chalak Spring Company is committed to ensuring the satisfaction of its customers. Adhering to a stringent quality control system policy, the company emphasizes system-oriented thinking and process orientation.

By continuously enhancing the efficiency and technical knowledge of its personnel through effective training, Chalak Spring strives for excellence.

The company prioritizes workplace health and safety, implementing measures to guarantee safety, minimize risks, and adhere to relevant standards through the expertise of experienced professionals.

Additionally, Chalak Spring is dedicated to environmental preservation and the optimization of natural resources and energy consumption.





### Future Plans

Based on extensive research using modern management techniques and continuous investments in advanced technologies, Chalak Spring Sepahan aims to elevate its production capabilities and expand into global markets. To achieve this objective, the company has implemented three main projects:

- Production of heat-treated wires
- Spring production with diameters up to 40mm
- Increasing overall production capacity

### Laboratory Facilities

In line with our commitment to improving quality, the laboratory unit at Chalak Spring is equipped with the most advanced spring testing machines. To ensure the quality of our products, testing is conducted from raw materials to the final product in accordance with international standards.

Our laboratory capabilities include:

- Spring force test
- Fatigue test
- Torque test
- Preloading force test
- Bending test
- Plastic zone and dead point testing
- Spring release load test
- Creep strength resistance test



To ensure the quality of the raw materials used, we perform the following tests:

- Tensile strength
- Mandrel formability
- Percent elongation
- Torsion strength
- Thickness measurement



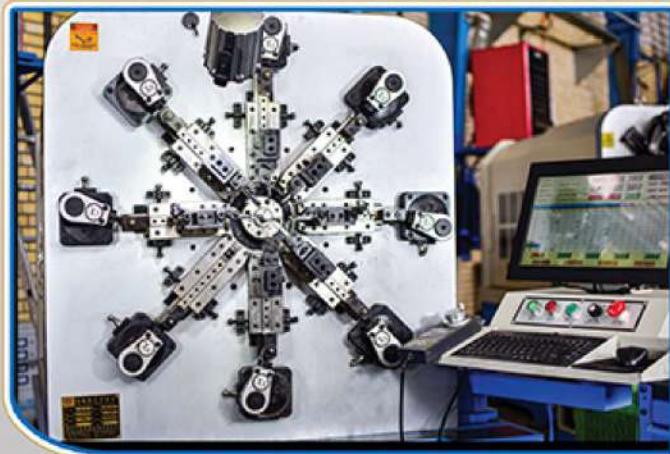
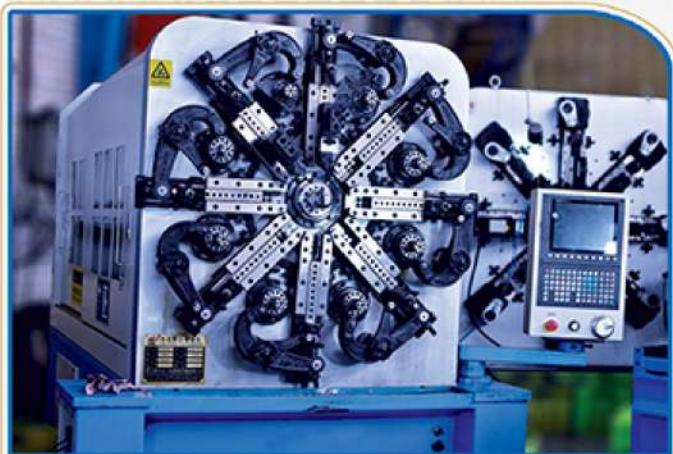
Sampling and testing are conducted according to standard tables based on the type of material.





## Equipment and Machinery

- Various CNC spring coiling machines with 2 to 16 axes
- Different types of destressing furnaces, including dry furnaces and conveyor systems equipped with firewall and oil temper ovens
- Various grinding machines
- Hydraulic and impact presses
- A wide range of testing devices, including those for tension and pressure testing, fatigue testing, torsional resistance, elongation measurement, spring preload force measurement, plastic zone determination, useful lifespan estimation, and spring damping calculation
- Specialized galvanized line for springs





## Research and Development

- Innovation and Improvement: Continuously innovating and improving construction technologies.
- Adopting Latest Technologies: Identifying the latest global manufacturing technologies and conducting laboratory tests to implement advanced methods.
- Cost Reduction: Reducing the cost of manufactured products through optimal design, lowering manufacturing costs, and decreasing product weight while maintaining physical properties. These capabilities highlight the development efforts of Chalak Spring Sepahan Company's research unit.

## Engineering Technology

Chalak Spring Sepahan Company, with over 40 years of technical expertise and continuous experience in the specialized production of various types of springs, has dedicated its technical and engineering units to meeting the needs of the industrial community and its clients. The technical and engineering team, equipped with advanced testing machines and specialized software, is committed to designing and enhancing the quality of the manufactured products, consistently providing valuable support to customers.





## Quality Control

The quality control unit of Chalak Spring Sepahan Company, in line with the goal of customer orientation and maintaining continuous improvement and monitoring the quality of its manufactured products in the three stages of raw material entry, during the manufacturing process and final performance testing, aims to ensure that the quality requirements of the final product are met.

-The control of raw materials in Sepahan Chalak Spring company is inspected by the laboratory unit with statistical control methods and in case of non-compliance, raw materials are prevented from entering the production cycle.

-The quality control unit has full supervision over the quality control of the manufactured product in all stages of construction and production stations using statistical control methods, and if non-compliance is observed, the quality is reviewed through meetings and the effectiveness of the measures is monitored.

-In order to increase the quality of manufactured products, the quality control unit of Chalak Spring Sepahan company tests the final product at the same time as the production according to the demands of its customers by using the specialized mechanics spring laboratory.





## Spring Strip

All kinds of spring strips for various uses with complex geometric shapes are produced from all kinds of raw and juicy materials. Chalak Spring is proud to have designed and produced a wide range of spring strips without size and dimension limitations for various industries.





## Tension spring

Chalak Spring company produces all kinds of tension springs with a thickness of 0.25mm to 6mm in different dimensions and sizes for various industries,



some of them are briefly mentioned below:

Tension spring of one-end hook

Tension spring with English hook

Tension spring with a German hook

Tension spring without hook





## Spiral spring

Spiral springs are produced in different types of belt, rolled, and wire. Chalak Spring Sepahan Company has specialized in the production of this type of products and with continuous investment, it has used the most advanced manufacturing technology to produce this type of springs. Car seat belt spring , and vacuum cleaner retractor wires.



At Chalak Spring, these types of springs are produced in different sizes and shapes without restrictions.





## Cylindrical Spring

Cylindrical springs are characterized by their uniform external diameters across all coils. This type of spring is produced in various forms, as listed below:

- **Neutral Rings:** Typically used at the beginning and end of cylindrical springs to ensure they stand vertically. In some cases, grinding operations are employed to stabilize the vertical length.



- **Uniform Distance Between Rings:** Cylindrical springs usually have uniform spacing between coils. However, variable distances can be used to achieve different forces, create curved force graphs, adjust dampers, and improve control of spring vibration.
- **Springs Without Neutral Rings:** These can be used as gear nuts.

At Chalak Spring Sepahan Company, cylindrical springs of various types are produced without size limitations, ranging from 0.1mm to 8mm in thickness.





## Conical Spring

Conical springs are springs that use two or more dimensions in their outer diameter. They are utilized for various reasons, as outlined below:

- **Length Limitation:** The tapered design of conical springs reduces the closed-length of the spring relative to the total number of coils, which is beneficial when there are length constraints in the assembly position.



- **Variable Force:** Conical springs can provide a variable force, resulting in a curved force diagram, which is sometimes required for specific applications.
- **Eliminating Bending issues:** Unlike cylindrical springs, which can experience length deviation and bending, the conical design prevents any possible bending.
- **Accommodating Different Sizes:** Conical springs are useful when the opposite parts at the top and bottom of the spring are of different sizes.

At Chalak Spring Sepahan Company, conical springs are produced in various sizes, with wire thicknesses ranging from 0.1mm to 8mm.

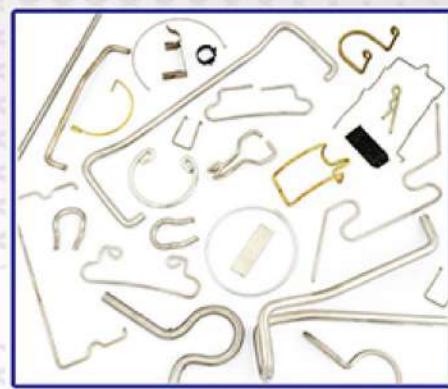




## Spring Spikes

At Chalak Spring Sepahan Company, various types of spring spikes are produced from wire, belt, and rolled materials. The types of spikes produced include:

- Spikes on the shaft
- Spikes inside the bush



- Split pin spikes
- Dust collector spikes (utilized in car suspension systems)
- Various types of platinum springs.



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