Global

Forging and Casting Components

Market Report 2023

Key Players, Types, Applications, Countries, Market Size, Forecast till 2030

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Report Details

The base year for the calculation is 2022 and 2018 to 2022 will be historical period. At the same time, data for the year 2023 will be an estimated one while the forecasted data will be from year 2023 to 2030.

1 Research Methodology

Primary Research Methodology

Secondary Research Methodology

Market Size Estimation Methodology

Data Triangulation

2 Competitors Analysis

Business Segment/ Overview:

Investment in Research and Development

Recent Developments:

Business Strategy

SWOT Analysis

3 Market Dynamics

Key Drivers, Restraints and Opportunities

Market Attractiveness Analysis for Each Segment and Region

PESTEL Analysis

Porter 5 Force's Analysis

Value Chain Analysis

4 Regional and Country Analysis

North America (United States, Canada, Mexico)

Europe (UK, France, Germany, Italy, Russia, Spain)

Asia Pacific (China, Japan, Korea, India, South East Asia)

South America (Brazil, Argentina , Colombia)

Middle East & Africa (GCC Countries, Egypt, South Africa, Nigeria, Turkey)

Report Scope

Type

- Forging
- Casting

End-user

- Automotive
- Aerospace
- Power Generation
- General Industrial
- Others

Regions

- North America
- Europe
- Asia Pacific
- South America
- Middle East & Africa

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Chapter 4 Forging and Casting Components Market Overview

4.1 Product Overview and Scope of Forging and Casting Components

Forging involves shaping metal by applying compressive forces, typically with the use of a hammer or press. The process typically starts with a solid piece of metal, known as a billet or ingot, which is heated to a suitable temperature and then shaped using localized compressive forces. There are several types of forging processes, including open-die forging, closed-die forging, and impression-die forging. Each method has its own characteristics and is suitable for specific applications. Forged components tend to exhibit excellent strength and durability due to the alignment of the metal's grain structure during the forging process. This makes forgings suitable for applications requiring high load-bearing capacities and resistance to fatigue. Forging can be performed on various metals, including steel, aluminum, titanium, and some alloys. The choice of material depends on the specific requirements of the component. Forging is generally better suited for simpler shapes with fewer intricate details. Complex geometries may require additional machining after the forging process.

Casting involves pouring molten metal into a mold, allowing it to solidify and take the shape of the mold. The casting process typically follows these steps: A pattern of the desired component is created using materials like wood, plastic, or metal. The pattern is used to create a mold by packing a suitable material, such as sand or ceramic, around it. The mold is then removed, leaving behind a cavity in the shape of the pattern. The molten metal is poured into the mold cavity and left to cool and solidify. During this process, the metal takes the shape of the mold. Once the metal has solidified, the casting is removed from the mold, and any excess material, such as gates and risers, is removed. Additional machining or finishing processes may be performed to achieve the desired specifications. Casting allows for a wide range of shapes and complex geometries to be produced with relative ease. Intricate details, undercuts, and internal cavities can be achieved through casting. Casting can be performed on various metals, including steel, aluminum, brass, bronze, and cast iron. The choice of material depends on factors such as strength requirements, corrosion resistance, and cost. Casting is generally a cost-effective method for producing components, especially for large quantities or complex shapes.

Both forging and casting have their own advantages and are selected based on factors such as component design, material properties, required strength, complexity, and cost considerations. Manufacturers evaluate these factors to determine the most suitable method for producing a specific component.

Chapter 8 Forging and Casting Components Market – Industry Analysis

8.1 Market Drivers

8.1.1 Growing industrialization and infrastructure development is a significant driver of the forging and casting component market

Industrialization involves the establishment and expansion of manufacturing facilities across various sectors. This leads to a higher demand for industrial machinery and equipment, which often require forging and casting components for their construction and operation. Components such as gears, shafts, valves, and turbine parts are essential in industrial machinery, driving the demand for forging and casting components.

As countries invest in infrastructure development, such as roads, bridges, railways, ports, and buildings, there is a significant demand for forging and casting components. These components are used in construction machinery, structural elements, and various infrastructure projects. For example, cast iron and steel components are commonly used in bridge construction, while forged components are vital in heavy construction equipment.

Industrialization and infrastructure development often require a reliable and sufficient energy supply. This leads to the expansion of the energy sector, including power plants, renewable energy installations, and oil and gas infrastructure. Forging and casting components are used in power generation equipment, pipelines, and refining machinery, supporting the growth of the energy sector.

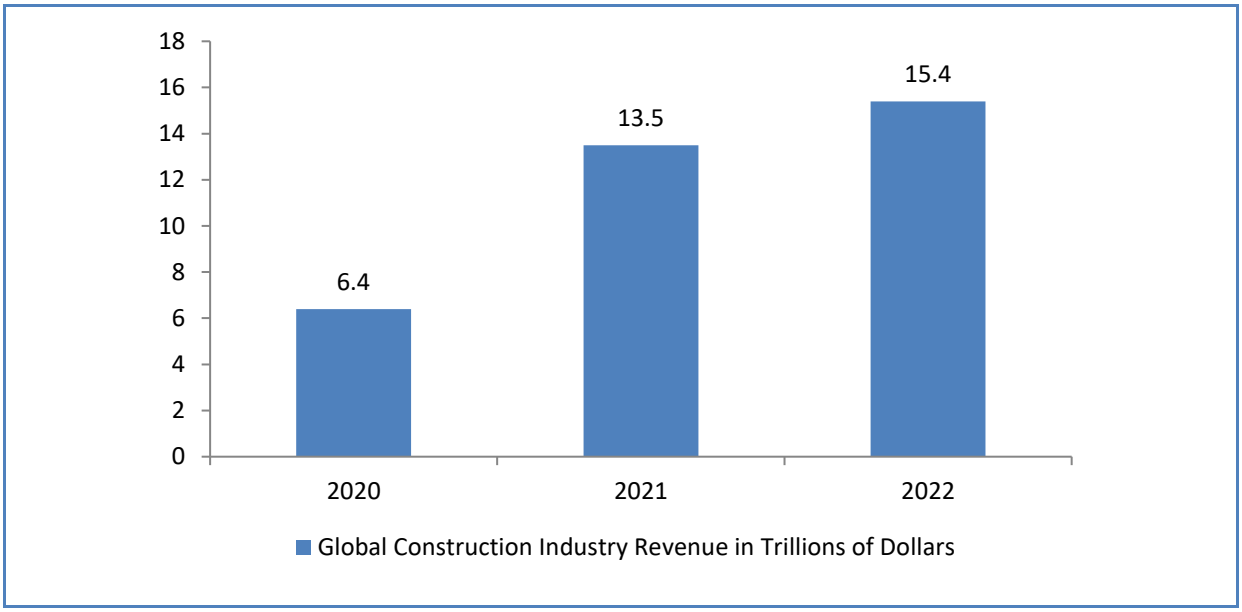
Industrialization typically leads to increased mobility and transportation requirements. The automotive and transportation industries experience growth as a result, leading to higher demand for forging and casting components in the production of vehicles, engines, transmissions, and other transportation equipment. The construction of railways, locomotives, and ships also contributes to the demand for these components.

Industrialization and infrastructure development are particularly prominent in emerging markets where rapid urbanization is taking place. As urban areas expand, the need for new infrastructure, housing, and industrial facilities increases. This, in turn, drives the demand for forging and casting components to support construction, industrial processes, and urban development projects.

Industrialization is not solely focused on new construction projects but also involves the repair and maintenance of existing infrastructure. Aging infrastructure requires regular maintenance, repair, and replacement of components, creating a continuous demand for forging and casting components.

Governments play a vital role in driving industrialization and infrastructure development through policies, incentives, and investment. Initiatives such as economic zones, industrial parks, and public-private partnerships stimulate industrial growth and infrastructure projects, further boosting the demand for forging and casting components.

FIG. 25 **Global Construction Industry Revenue in Trillions of Dollars**



Chapter 12 Global Forging and Casting Components Market Analysis by End-user

12.1 Global Forging and Casting Components Revenue and Market Share (%) by End-user (2018-2030)

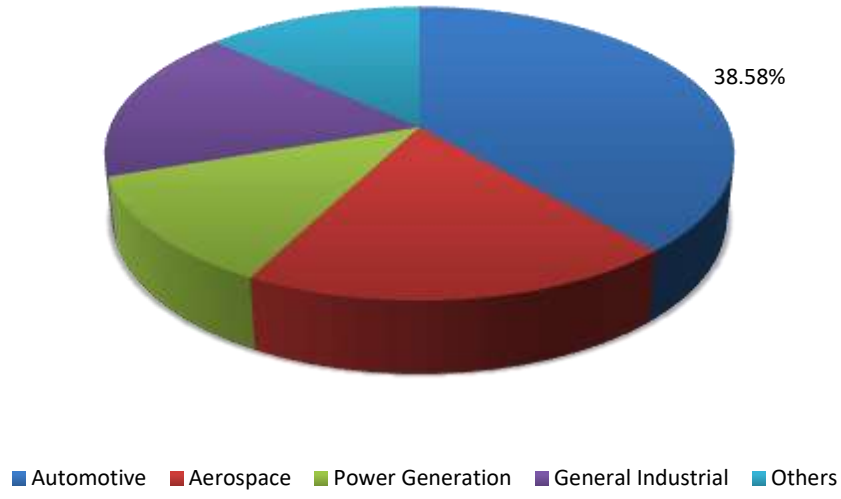
TABLE 10 Global Forging and Casting Components Revenue (USD Million) by End-user (2018-2030)

	2018A												2030F
Automotive	XX												xx
Aerospace	XX												xx
Power Generation	XX												xx
General Industrial	XX												xx
Others	XX												xx
Total	XX												XX

TABLE 11 Global Forging and Casting Components Revenue Share (%) by End-user (2018-2030)

	2018												2030
Automotive	XX												xx
Aerospace	XX												xx
Power Generation	XX												xx
General Industrial	XX												xx
Others	XX												xx
Total	XX												XX

FIG. 1 **Global Forging and Casting Components Revenue Market Share (%) by segment in 2022**



Source: Cognitive Market Research

Based on the end-user, the automotive segment is dominating the forging and casting components market during the forecast period. This is attributed to the increasing demand of automotive coupled with rising disposable income in emerging economies. Automotive components need to withstand high loads, stresses, and temperature variations. Forging and casting processes are capable of producing components with superior strength, toughness, and durability. Forging and casting processes allow the creation of components that can handle the demanding operating conditions of vehicles, such as engine components, chassis parts, and drivetrain components.

Chapter 13 Global Forging and Casting Components Manufacturers Profiles/Analysis

This segment of the report provides in-depth and pertinent information on every foremost player in the market through both primary and secondary research. The company profiling chapter includes ten or more key players, which are dominating the market. Each company profile includes demystifying professional information in a tabular format, which comprises the company's official website, established year, market position, geographical presence, competitors, and contact information.

Further, company profiling includes an in-detailed business overview, COVID-19 impact on the particular firm, product type specifications, revenue & market share, and recent developments done by the company for its inorganic development, such as mergers, strategic acquisitions, partnerships, and others. Besides, profiling includes the company's investment in research and development activities.

The recent innovative product launches, business expansion, investments done by the company in different markets, and other news are also available in the company profiling section. At last, it provides the company's business strategy and SWOT analysis.

Questions

- Which are the paramount players in the market?
- What key Developments Company has done in recent years?
- What are the major acquisitions done by the players?
- What are the opportunities for companies to grow in the Keychain Pendant market?
- Which player held the largest market share in 2020 & 2021?

13.1 Doncasters

13.1.1 Doncasters Basic Information, Manufacturing Base, Sales Area and its Competitors

TABLE 12 Doncasters Basic Information, Manufacturing Base, Sales Area and Its Competitors

	Item	Description
	Company Name	Doncasters Group
	Website	www.doncasters.com
	Established Date	1778
	Headquartered	United Kingdom
	Market Position/ History	Established in 1778 by Daniel Doncaster, the company began its life in Sheffield, UK. In 1898, Samuel Doncaster and Herbert Barber decide to demolish the three existing 6-hole crucible furnaces in Doncaster Street, and replace them with an efficient 24-hole furnace on a new site close by in Hoyle Street. Daniel Doncaster and Sons becomes a leading supplier of forged steel tools and valves to the automotive industry in the 1940s. In 1997, Doncaster's plc is formed. The company built on this foundation over time to become a leader in the specialized manufacturing and casting of superalloys, evolving into the Doncasters of nowadays, a vibrant group of 15 cutting-edge production facilities, each with market-leading specialist capabilities and serving a substantial blue-chip clientele base globally.
	Sales Area	Worldwide
	Manufacturing Location	Europe, the USA, and Asia
	Ownership Type	Private
	No. of Employees	~ 2,200
	Competitors	Castings, Renold, Morgan Advanced Materials, KAP, Consolidated Precision Products British Steel, etc.

	CEO	Mike Quinn
	Contact Information	Repton House, Bretby Business Park, Ashby Road, Burton-upon-Trent, DE15 0YZ, United Kingdom Tel: +44 (0) 1332 864 900
	Ticker	xx

13.1.2 Business Segment/ Overview:

Doncasters is a leading international manufacturer of specialist superalloys and high-precision alloy components made for the most demanding conditions. The business serves the world's leading OEMs in the aerospace, industrial gas turbine, and specialist automotive markets.

It operates numerous businesses such as:

UK & EUROPE

- Chard Precision Castings
- DPC Bochum
- DPC Deritend
- IVOSTUD
- Polycast
- Ross & Catherall
- Trucast UK

USA

- Castings, Oxford, AL
- Castings, Groton, CT
- Forgings, Springfield, MA
- Superalloys, Long Beach, CA
- Trucast USA
- Uni-Pol

ASIA

- Uni-Pol

13.1.3 Forging and Casting Components Product Types Specification

Product	Product Description
CHARD PRECISION CASTINGS	Chard Precision Castings specialises in customer-led design cooperation to create high-precision investment castings that are equal in size and accuracy, using both conventional materials and unusual nickel and cobalt alloys. It produces cast components made of superalloys based on nickel and cobalt, such as blade and vane airfoils up to 11.81" (300mm) in diameter and structural castings up to 19.68" (500mm) in diameter. These products features: • Vacuum melt: pour capacity up to 88.2lb (40kg) and 0.5m • Air melt: pour capacity up to 77.16lb (35kg) with a roll of 0.37m • Pre-Cast: Simulation; Wax; Shell • Post Cast: X-ray; Finishing & weld repair, CMM, Laser measurement, Blue light scanning • Vacuum Heat Treatment & LP Autoclave • Just-in-time procurement systems • Rapid Prototyping techniques
Forgings of Springfield	Doncasters Forgings of Springfield (Storms Forge) produces closed die forgings for critical performance applications in the aerospace, power generation, oil and gas, and industrial markets. It produces products for aerospace such as • Airframe ready components • Blades, Vanes, IGVs • Structural components

	• Braking components, Rotor Keys, Beam Keys, Torque Bars • Fittings, Fuel nozzles, fixtures, Elbows For industrial gas turbines, the company manufactures: • Compressor airfoils • Blades • Stators • Rotors • Buckets • IGVs

13.1.6 Recent Developments:

Year	Latest News
2023	**Doncasters invests further in aviation future** Doncasters Precision Castings of Groton and Doncasters Precision Castings - Deritend has received $12.9 million in investment as the commercial aviation industry recovers. In addition to their present manufacturing facility will be built to contain three robot shell coating cells and two final drying systems as part of Doncasters Precision Castings of Groton's considerable investment. The line will start producing in 2023 and ramp up to its maximum operating capacity in 2025.

13.1.7 Business Strategy

Doncasters Group developed a reputation for quality craftsmanship, reliability, and metallurgical products. Doncasters has centered around defining what their customers' value expectations are in order to become customers' partners of choice. Similarly, its strategic priority is focused on upgrading Doncasters' operating equipment, technology platforms, and capabilities across our operating sites, starting on the shop floor, as well as upgrading IT infrastructure so that the business can operate in a more efficient, accurate, and real-time manner and compete on a wider scale.

13.1.8 Management Change

Doncasters Group has announced the appointment of Ben Hooper as Chief People Officer, effective September 5th, 2022. The Group has announced the recruitment of Indy Rattu as Vice President for European Operations, effective June 6, 2022. Additionally, Doncasters Group has announced its appointment of Helen Barrett-Hague as general counsel and chief risk officer, effective 1 June. At the same time, Ian Molyneux, the group's current general counsel and group company secretary, has decided to resign from his position and depart the company in the late summer to pursue other business interests.

13.1.9 Doncasters S.W.O.T Analysis

Strength

- Worldwide reach

Weakness

- Lowering issuer credit rating

Opportunity

- Continuous improvement and technology

Threats

- Stiff Competition

13.1.10 COVID-19 Impact Analysis

Note: Following company's data will be provided in the same format, for example 1st company profile shown above. In case you need any data Customization please feel free to contact us!

13.2 **Precision Castparts Corp**

13.3 **Consolidated Precision Products (CPP)**

13.4 **Frisa**

13.5 **Carlton**

13.6 **Arconic**

13.7 **Wymon**

13.8 **Nippon Steel & Sumitomo Metal**

13.9 **KOBELCO**

13.10 **Thyssenkrupp**

13.11 **Aichi Steel**

13.12 **Others**

Note: Company Revenue Information Will Be Provided Subject to Data Availability!

Chapter 14 Global Forging and Casting Components Market : Regional Analysis

Report covers global regional analysis in this segment of final deliverable, which gives the general overview about the market situation in various countries in holistic way possible. Geographically market is been fragmented into major regions, such as North America, Europe, Asia Pacific, Latin America, Middle East and Africa. The research has been done through comprehensive market surveys, case studies, and secondary research through various trustworthy sources.

This chapter offers complete regional analysis for both mature as well as developing economies. Beside this, the segment covers detail analysis of each country of every region which gives the data insight for driving factors, demand analysis, technological advancement, and competitive analysis of every region in this segment.

- Which region holds the largest market share?
- Which region is expected to grow fast during forecast period?
- What factors are driving the growth of the market in specific region?
- Which region have large number of market players?
- What are the changing policies of regions in particular market?
- Which specific country have the highest consumption for particular product?

14.1 Global Forging and Casting Components Revenue and Market Share (%) by Region (2018 - 2030)

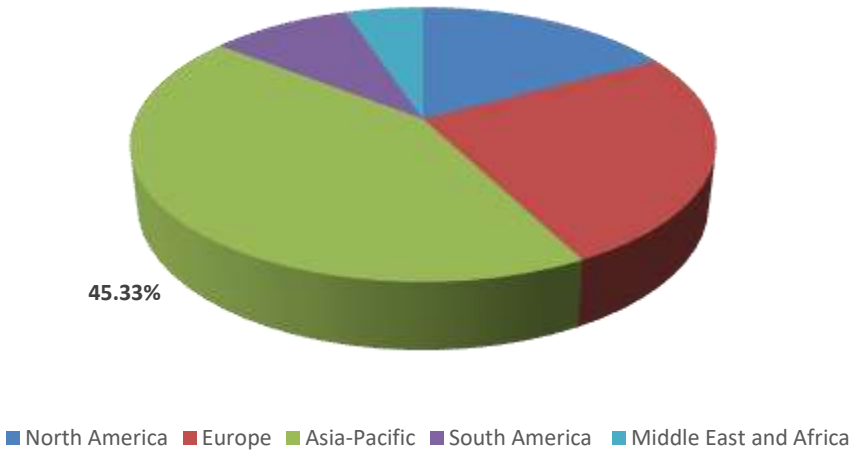
TABLE 14 Global Forging and Casting Components Revenue (USD Million) by Region (2018- 2030)

	2018				2022								2030
North America	XX				XX								Xx
Europe	XX				XX								Xx
Asia-Pacific	XX				XX								Xx
South America	XX				XX								Xx
Middle East and Africa	XX				XX								Xx
Total	**XX**				**$58,489.95**								**XX**

Global Aluminum Powders market was valued at USD 58,489.95 Million in 2022 and is expected to grow at a CAGR of 8.64% over the forecast period, from 2023 to 2030.

14.1.1 Global Forging and Casting Components Revenue Market Share (%) by regions in 2022

FIG. 20 **Global Forging and Casting Components Revenue Market Share (%) by regions in 2022**



Source: Cognitive Market Research

Based on region, Asia Pacific is dominating the forging and casting components market in terms of revenue market share throughout the forecast period. This is due to the presence of several key players and the end-use industries of the forging and casting components in this region. The Asia Pacific region, including countries such as China, India, Japan, and South Korea, has witnessed rapid industrialization in various sectors such as automotive, aerospace, construction, and manufacturing. These industries have a significant demand for forged and cast components for their production processes, leading to a robust market. In addition, manufacturing of the components in countries like India and China offers competitive labor costs compared to many other regions, making it an attractive destination for manufacturing hub. The region also has raw material source including iron ore, steel, aluminum, and other metals that are essential in forging and casting component production.

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Future Updates	Paid	Paid	Paid	Paid	Free (3 Years Validity)	Unlimited Validity
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