+357 96 030922
info@marketpublishers.com

Global Turbine Generator Rotor Forging Supply, Demand and Key Producers, 2026-2032

https://marketpublishers.com/r/G90D0DEC43B0EN.html
Date: June 2026
Pages: 155
Price: US$ 4,480.00 (Single User License)
ID: G90D0DEC43B0EN

Abstracts

The global Turbine Generator Rotor Forging market size is expected to reach $ 1039 million by 2032, rising at a market growth of 9.1% CAGR during the forecast period (2026-2032).

Turbine generator rotor forging refers to a high-end forging integrally formed from large alloy steel ingots via open-die forging, used to manufacture the core rotating components of turbine generators. It mainly consists of HP, IP and LP turbine rotors and the generator rotor itself. Under high-speed rotation at 1500–3000 r/min, the rotor withstands enormous centrifugal force, torque and bending stress, requiring high strength, high toughness, high magnetic permeability and high-temperature resistance (400–565?). The material system primarily uses Ni-Cr-Mo-V series alloy steels, including grades 25Cr2Ni4MoV, 30Cr1Mo1V, and FB2 martensitic heat-resistant steel for ultra-supercritical units. As the 'heart' of power generation equipment, its manufacturing involves dozens of complex steps from smelting, ingot casting, open-die forging, heat treatment, precision machining to non-destructive testing, and its design and process complexity have long been a benchmark for a nation's heavy equipment industry.

Turbine generator rotor forging is one of the most technically demanding and value?added base components in heavy equipment manufacturing. It directly determines whether million?kilowatt thermal and nuclear power units can operate safely and stably for decades. Pricing: a million?kilowatt nuclear monoblock LP rotor can cost USD 5–8 million, while conventional 300–700 MW thermal rotors range from USD 0.5–1.2 million – heavily dependent on weight, material grade and supplier qualification. Margins are highly uneven: Japan Steel Works, with its global monopoly and extreme manufacturing capability, commands an estimated gross margin exceeding 40%;

+357 96 030922
info@marketpublishers.com

Chinese leaders (CFHI, Sinomach Heavy) have achieved domestic breakthroughs in USC FB2 and nuclear rotors, with margins of 25–35%; newer entrants like Taiyuan Heavy face margins below 20% due to capacity ramp?up and prolonged customer certification. Downstream primary applications: coal?fired power accounts for 55–60% of rotor forging demand, nuclear power 25–30%, gas?steam combined cycle and industrial cogeneration 10–15%, others 5%. Incremental demand is driven by: (i) batch construction of China's Hualong One reactors (peaking 2025–2028) and nuclear exports, boosting large?tonnage rotor demand; (ii) life extension and replacement of aging supercritical/ultra?supercritical units (620°C class) in China; (iii) increased flexibility requirements for gas power under the global energy transition, driving replacement of medium?small rotors. Landscape: the global high?end large?tonnage rotor market has long been dominated by Japan Steel Works (~80% of large nuclear forgings), with Doosan Enerbility, CFHI and Sinomach Heavy forming the second tier. Recent breakthroughs by CFHI and Sinomach Heavy in FB2 heat?resistant steel rotors and nuclear monoblock LP rotors are gradually breaking the overseas monopoly, but JSW still holds pricing power and process secrets. Taiyuan Heavy, Shanghai Electric and Dongfang Electric primarily serve the supporting and medium?small rotor segments, not yet in the global high?end core competition. Uncertainties include: new material challenges for ultra?supercritical units moving to 700°C+, which may render FB2 obsolete; pressure on new coal power projects from carbon?reduction policies, potentially shrinking the thermal rotor market in the long term; and tightened nuclear safety regulations extending certification cycles (often 3?5 years), hindering rapid capacity expansion for new entrants. Conclusion: Turbine generator rotor forging is an oligopolistic, high?barrier, high?value?added industry. Its growth is driven by batch nuclear construction, thermal unit refurbishment and domestic substitution. The structural features are extreme technical barriers, lengthy customer certification, and scarce extreme?scale manufacturing capacity. Over the next five years, Chinese leaders are likely to increase their global share in nuclear and USC rotors, but they will not unseat JSW from its dominant high?end position in the short term.

This report studies the global Turbine Generator Rotor Forging production, demand, key manufacturers, and key regions.

This report is a detailed and comprehensive analysis of the world market for Turbine Generator Rotor Forging and provides market size (US$ million) and Year-over-Year (YoY) Growth, considering 2025 as the base year. This report explores demand trends and competition, as well as details the characteristics of Turbine Generator Rotor Forging that contribute to its increasing demand across many markets.

+357 96 030922
info@marketpublishers.com

Highlights and key features of the study
Global Turbine Generator Rotor Forging total production and demand, 2021-2032, (Units)
Global Turbine Generator Rotor Forging total production value, 2021-2032, (USD Million)
Global Turbine Generator Rotor Forging production by region & country, production, value, CAGR, 2021-2032, (USD Million) & (Units), (based on production site)
Global Turbine Generator Rotor Forging consumption by region & country, CAGR, 2021-2032 & (Units)
U.S. VS China: Turbine Generator Rotor Forging domestic production, consumption, key domestic manufacturers and share
Global Turbine Generator Rotor Forging production by manufacturer, production, price, value and market share 2021-2026, (USD Million) & (Units)
Global Turbine Generator Rotor Forging production by Type, production, value, CAGR, 2021-2032, (USD Million) & (Units)
Global Turbine Generator Rotor Forging production by Application, production, value, CAGR, 2021-2032, (USD Million) & (Units)

This report profiles key players in the global Turbine Generator Rotor Forging market based on the following parameters - company overview, production, value, price, gross margin, product portfolio, geographical presence, and key developments. Key companies covered as a part of this study include Japan Steel Works (JSW), Doosan Enerbility, China First Heavy Industries (CFHI), Sinomach Heavy Equipment Group (SinoMach Heavy), Taiyuan Heavy Industry (TZ), Bharat Forge Limited, Larsen & Toubro Limited, Allegheny Technologies Incorporated (ATI), Japan Casting & Forging (JCF), Kobe Steel (KOBELCO), etc.

This report also provides key insights about market drivers, restraints, opportunities, new product launches or approvals.

Stakeholders would have ease in decision-making through various strategy matrices used in analyzing the World Turbine Generator Rotor Forging market

Detailed Segmentation:

Each section contains quantitative market data including market by value (US$ Millions), volume (production, consumption) & (Units) and average price (US$/Unit) by manufacturer, by Type, and by Application. Data is given for the years 2021-2032 by year with 2025 as the base year, 2026 as the estimate year, and 2027-2032 as the

+357 96 030922
info@marketpublishers.com

forecast year.

Global Turbine Generator Rotor Forging Market, By Region:

United States

China

Europe

Japan

South Korea

ASEAN

India

Rest of World

Global Turbine Generator Rotor Forging Market, Segmentation by Type:

? 100 MW Class

100–300 MW Class

300–700 MW Class

700–1000 MW Class

> 1000 MW Class (incl. Nuclear)

Global Turbine Generator Rotor Forging Market, Segmentation by Service Environment:

Subcritical / Supercritical (?566?) - NiCrMoV

Ultra?supercritical (600–620?) - FB2

+357 96 030922
info@marketpublishers.com

Generator Rotor (Non?heat) - NiCrMoV / 26NiCrMoV

Low Pressure (LP) Rotor - NiCrMoV / Monobloc

Global Turbine Generator Rotor Forging Market, Segmentation by Application:

Fossil Fuel Power (Coal, Gas)

Nuclear Power (PWR, CANDU)

Generator Rotor for Power Plant

Steam Turbine Retrofitting & Service

Others

Companies Profiled:

Japan Steel Works (JSW)

Doosan Enerbility

China First Heavy Industries (CFHI)

Sinomach Heavy Equipment Group (SinoMach Heavy)

Taiyuan Heavy Industry (TZ)

Bharat Forge Limited

Larsen & Toubro Limited

Allegheny Technologies Incorporated (ATI)

Japan Casting & Forging (JCF)

+357 96 030922
info@marketpublishers.com

Kobe Steel (KOBELCO)

Scot Forge

Arconic

Mitsubishi Heavy Industries (MHI)

Nippon Steel Corporation

Shanghai Electric (SEC)

Dongfang Electric

Bruck GmbH

Siempelkamp Giesserei

Key Questions Answered:
1. How big is the global Turbine Generator Rotor Forging market?
2. What is the demand of the global Turbine Generator Rotor Forging market?
3. What is the year over year growth of the global Turbine Generator Rotor Forging market?
4. What is the production and production value of the global Turbine Generator Rotor Forging market?
5. Who are the key producers in the global Turbine Generator Rotor Forging market?
6. What are the growth factors driving the market demand?

+357 96 030922
info@marketpublishers.com

Contents

+357 96 030922
info@marketpublishers.com

3 WORLD MANUFACTURERS COMPETITIVE ANALYSIS

4 UNITED STATES VS CHINA VS REST OF THE WORLD

+357 96 030922
info@marketpublishers.com

5 MARKET ANALYSIS BY TYPE

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

List Of Tables

LIST OF TABLES

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

List Of Figures

LIST OF FIGURES

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

I would like to order

Product name: Global Turbine Generator Rotor Forging Supply, Demand and Key Producers, 2026-2032

Product link: https://marketpublishers.com/r/G90D0DEC43B0EN.html

Price: US$ 4,480.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:
info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page https://marketpublishers.com/r/G90D0DEC43B0EN.html