

Date:-August 10, 2024

To,
Bombay Stock Exchange Limited
Phiroze Jeejeebhoy Towers,
Dalal Street,
Mumbai – 400001.

Security Id:-Rudra

Scrip Code:- 539226

Subject	:-	Brief Detail Regarding Investment Casting;
Reference	:-	Regulation 30 of SEBI (Listing Obligations and Disclosure Requirements) Regulations, 2015.

With reference to the subject cited above and we hereby enclose brief detail regarding Investment Casting, its Global Scenario, Current Trends in our country and other relevant information thereon.

Yours sincerely
Thank you
For, **RUDRA GLOBAL INFRA PRODUCTS LIMITED**

Sahil Gupta
Director
DIN:- 02941599

Encl.:- Brief Detail Regarding Investment Casting.



RUDRA AEROSPACE & DEFENCE PVT. LTD.

100% Subsidiary of Rudra Global Infra Products Ltd.



RUDRA GLOBAL

INVESTMENT CASTING



SAFE HARBOUR STATEMENT

Statements in this presentation describing the Company's performance may be "forward looking statements" within the meaning of applicable securities laws and regulations. Actual results may differ materially from those directly or indirectly expressed, inferred or implied. Important factors that could make a difference to the Company's operations include, among others, economic conditions affecting demand/supply and price conditions in the domestic and overseas markets in which the Company operates, changes in or due to the environment, Government regulations, laws, statutes, judicial pronouncements and/or other incidental factors.



ABOUT **RUDRA AEROSPACE & DEFENCE**

The company planned to foray in the field of investment casting through its subsidiary Rudra Aerospace and Defence Pvt. Ltd. in 2018. Capex towards acquisition of land was done in 2019, and further development activities were undertaken to build the premises facilitating manufacturing and other operations.

However, in 2020 due to the outbreak of COVID-19 pandemic, the project was put on hold to allow the general market situation to normalize before making any capex investments. After assessing the market conditions in 2023 the company decided to expand its operations and made necessary capex investments in its TMT division, as there was latent demand for its goods in the market.

Post successful implementation of its 2023 initiative, the company has refocused its energies on investment casting and has broadly defined the capex and working capital required to initiate operations in this segment. Studies and research work are underway by the company to reassess the current market situation, growth and demand dynamics for investment casting components in defence and aerospace sectors.

 RUDRA AEROSPACE & DEFENCE PVT. LTD.



WHAT IS INVESTMENT CASTING?

Investment casting is a manufacturing process known for its ability to produce complex metal parts with high precision and excellent surface finish. This method involves creating a wax model of the desired part, which is then encased in a ceramic shell. After the wax is melted away, molten metal is poured into the cavity, creating a part that replicates the wax model with high precision. This method allows for the production of parts with intricate internal features that would be difficult or impossible to machine.

In the aerospace and defence sector, this process plays a crucial role in the production of critical components where accuracy, durability, and material performance are paramount for modern military applications.



GLOBAL SCENARIO

The global investment casting market was valued at \$18.31 bn in 2023. This market is expected to grow at a CAGR of 4.5-6% from 2024 to 2031, potentially reaching \$26 bn by 2030.

Major players in the investment casting sector are situated in the North American and Asia-Pacific regions. North America holds the largest market share, driven by its robust aerospace, medical, and defence sectors. The region's advanced manufacturing infrastructure and high demand for precision components significantly contribute to its market leadership.

In the Asia-Pacific region China continues to make significant contributions to the investment casting industry whereas India is rapidly emerging as a powerhouse. Driven by aggressive industrialization and robust infrastructure development, booming automotive, defence and aerospace sectors are significantly increasing the demand for high-quality investment cast components.



CURRENT TRENDS IN INDIA

The impetus given by the government through initiatives like 'Make in India' to encourage domestic manufacturing and technology development has led to the aerospace and defence industry in India witnessing an upward trajectory. Investment casting industries in India are expanding their capabilities to serve both domestic and international clientele. With increasing investments in defence and space exploration, the demand for precision cast components has never been higher, positioning foundries at the heart of India's aerospace and defence innovation

The growth of the aerospace and defence industries in India has been instrumental in driving technological advancements and economic growth. The Government of India aims to nearly triple India's total annual defence production to Rs 3 lakh crore by 2028-29. The target for defence exports is more than double at Rs 50,000 crore as against Rs 21,083 crore at present. The target for 2024-25 is Rs 1,75,000 crore worth of total annual defence production, which would include exports worth ₹35,000 crore. As per the defence ministry, of the total value of production in 2023-24, about 79.2% has been contributed by PSU's whereas private sector contributed 20.8%. As per a report by Jefferies, with an estimated domestic defence opportunity ranging between \$100-120 bn, the sector is expected to grow at a CAGR of 13% from FY23 to FY30.

By investing in and supporting these foundries, stakeholders can ensure that India not only meets its current defense and aerospace needs but is also well-positioned to respond to future challenges and opportunities in these critical sectors.



SIGNIFICANCE IN AEROSPACE & DEFENCE

Investment casting has been a cornerstone in manufacturing components with complex geometries and high precision, particularly vital in the aerospace and defense sectors. Investment casting contributes significantly to the performance and reliability of military and defence applications. Investment casting allows for the design and production of lighter, structurally sound aerospace components that are crucial for modern aircraft and spacecraft. These components often consist of complex geometries that traditional manufacturing methods cannot achieve, facilitating advancements in aerospace engineering and design. The process not only allows for the design and production of lighter and more complex parts but also supports the integration of high-performance materials like titanium and superalloys. These materials are essential for components that must withstand extreme temperatures and stresses.

India's strategic focus on strengthening its defense capabilities has significantly driven the demand for high-grade investment castings. Components such as gearbox casings, impellers, and intricate turbine blades are routinely produced, each adhering to the highest standards of quality and durability. This technology demands expertise in a variety of engineering fields, from super alloy metallurgy and high temperature ceramics to complex tool design and fabrication, surface coatings, testing and quality control, etc.



INVESTMENT CASTING APPLICATIONS IN THE DEFENCE INDUSTRY

It is integral to the defence industry due to its ability to produce high-quality, precise and durable components. Its applications span across various defence platforms, including aerospace, naval, land systems, and advanced military technologies, making it an essential manufacturing process in meeting the rigorous demands of modern defence systems.

It's applications further include:

- Aircraft engine components
- Surveillance and reconnaissance system components
- Missile guidance system parts
- Military vehicle chassis and suspension parts
- Naval vessel fixtures
- Armor systems
- Tactical communication equipment
- Targeting systems components
- Electronic warfare housings
- Precision munitions components



INVESTMENT CASTING APPLICATIONS IN THE AEROSPACE INDUSTRY

The process is essential for manufacturing critical parts in engines, airframes, and propulsion systems directly contributing to the performance, safety, and efficiency of modern aircraft and spacecraft.

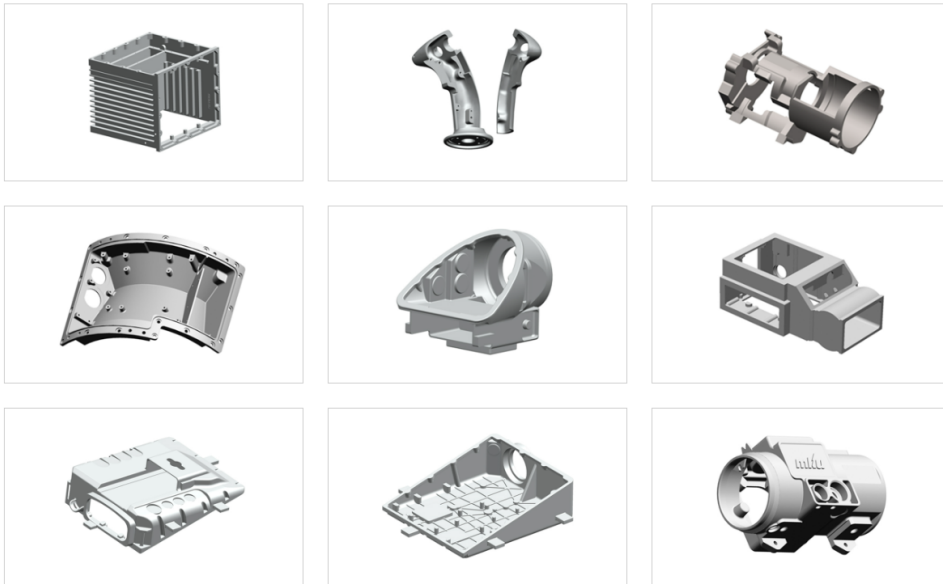
It's applications include:

- Turbine blades and vanes
- Airframe parts
- Landing gear components
- Combustion chamber liners
- Fuel system parts
- Exhaust nozzles
- Afterburner components
- Fuel manifolds
- Hydraulic system components
- Control surface hinges and actuators
- Cabin control system parts

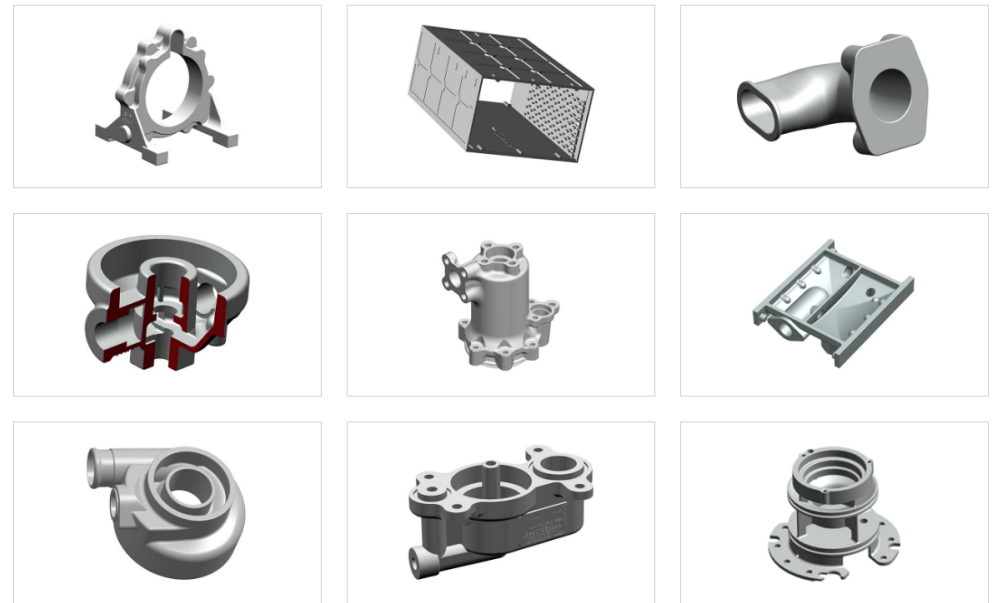


INVESTMENT CASTING APPLICATIONS

Defence Applications



Aerospace Applications



INVESTMENT CASTING PROJECTIONS



Particulars	Investment Casting in Defence and Aerospace
Capex	Rs. 20 cr.
Installed capacity	150 ton per month
Funding of project	80% through financial institutions 20% through own sources. Land allready owned
Approx Loan Amount in Rs.	80% financial institutes
Loan Tenure	10 years
EBITA	Up to 50%*
Capacity	To be doubled in Phase 2*

*subject to product matrix and vendor approvals





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