

Aequs and India's potential

Ramping up machining capacity for the aerospace industry



Machining Facility at Aequs

The global machining industry has witnessed remarkable growth over the years with several dynamic forces like technological advancements, escalating global demand and automation, supporting such progress. As a key sector which contributes to the mammoth manufacturing industry, there is significant potential for continual growth, taking into account the steep increase in demand for machined parts globally across sectors, based on a recent report by Deloitte.

The Indian machining sector has primarily been supporting the automotive industry so far. Considering the massive need by aircraft and parts OEMs for machined parts owing to the burgeoning demand for military and commercial aircraft globally, especially in the Asia-Pacific, Middle East and Latin America, there is immense opportunity for suppliers who have the capacity to absorb large orders and capability to deliver them flawlessly. However, this opportunity is not without its challenges.

In the aerospace industry, accountability, traceability, documentation and quality of parts are of critical

importance. Suppliers catering to the sector need highest industry accreditations to meet stringent quality and safety regulations of aerospace manufacturing owing to the profound effect each part has on safety. This may lead to entry barriers for new entrants as the entire process can be both time-consuming and capital intensive. Fortunately,



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in India, with the backing of the government in terms of regulatory support and infrastructure development, the country is on a 'hyper drive' to turn into an aerospace manufacturing hub for global players.

The "India opportunity"

India has the potential to become one of the largest commercial and defense aircraft markets. While mature markets are shifting their focus away from civil and defense spending, India is showing multi-fold increase in demand with rising air passenger traffic and increasing military procurement. India's liberalisation of civil aviation policies, offset requirements, cost advantages and a liberal Special Economic Zone law – providing attractive fiscal benefits for developers and manufacturers – are making the country an attractive destination for aerospace OEMs.

The country also has a strong framework to contribute to the resources in this sector such as research & development, the ability to leverage IT competitiveness in engineering services and manufacturing expertise. With a well-educated talent pool, India is ready to contribute to the global A&D sector. A competitive market ensures innovation and creative growth, encouraging more players to invest and optimise the manufacturing process. Based on a report by PwC, "the total offset opportunity for the aerospace sector is valued to be at least US \$ 10-15 billion." As India keeps honing its capabilities, with time a large share of this opportunity can be exploited by Indian suppliers. With the inclusion of both public and private players in the sector, India is fast becoming a diverse and creative environment for growth of the A&D sector.

With the inclusion of more aerospace players in this sector, the demand for machined parts shall continue to rise with time. This is good news for India which is in the cusp of building its indigenous supply chain base.

Machined to perfection

Although India has a strong domestic manufacturing base and has always had sufficient capacity to produce low cost components due to labour arbitrage and abundance of resources, catering to the aerospace industry requires ramping up in both capacity and capability. Presently, while the government policies are favourable for aviation and defense sectors, private manufacturers, building their precision machining capacity to leverage the demand for machined parts by aerospace OEMs, are under pressure to absorb the long gestation periods and acquire the necessary accreditations to be eligible for order fulfillment.

Fortunately, owing to the present interest of leading international OEMs shifting towards India, Indian companies are able to get access to the latest technologies and capabilities that are turning out to be a major game-changer in the A&D machining sector.

With lowering trade barriers and upskilling of the present talent pool, the drive towards globalisation of the aerospace supply chain has been amplified. With its adoption to newer technologies such as robotics and automation, strategic partnerships with leading aerospace players and government's push in the sector, India has the potential to ramp up its machining capabilities and become a major contributor in the aerospace machining sector.

DRDO: Successful Flight Test of SFDR

Defence Research and Development Organisation (DRDO) of India successfully flight tested the second indigenously developed 'Solid Fuel Ducted Ramjet (SFDR)' propulsion based missile system from ITR, Chandipur, Odisha on 8 February 2019. Ground booster, separation of ground booster and Nozzle-less-booster performance were found satisfactory. Missile was guided to high altitude to simulate aircraft release

conditions and subsequently nozzle-less-booster was ignited. SFDR based missile accelerated to achieve ramjet Mach number successfully. The trajectory was tracked by telemetry and radar stations till touchdown. All the mission objectives have been met. The success of SFDR propulsion technology is a significant milestone and will pave the way for development of long range air-to-air missiles in the country.

