

DYNAMATIC TECHNOLOGIES LIMITED



DESIGN
ENGINEERING
MANUFACTURING
MATERIAL SCIENCE

Dynamic Technologies Limited designs and builds highly engineered products for Automotive, Aeronautic, Hydraulic and Security applications. With futuristic design, engineering and manufacturing facilities in Europe and India, we are able to meet customers' exacting requirements on 6 continents.

Our facilities are located in India (Bangalore, Chennai, Coimbatore), United Kingdom (Swindon, Bristol) and Germany (Schwarzenberg). We also have sales offices across India and in North America, Europe & East Asia.

With three design laboratories in India and Europe, Dynamic Technologies is a leading Private R&D Organisation, with numerous inventions and patents to its credit. The Company and its Subsidiaries employ around 60 scientists and 600 engineers with expertise in Mechanical Engineering, Advanced Computer Aided Engineering, Materials & Metallurgical Engineering, Fluid Dynamics and Defence & Aerospace Research.

We are geared towards providing innovative and creative solutions to our customers on a continuous basis. Every business process is built around the customer and this approach has, over the years, enabled us to grow at a sustained pace by forging deep and lasting relationships with all our stakeholders that are based on mutual trust and respect, and upon our capabilities in delivering complex technological solutions at economically viable price levels.



Global Sole Supplier of Flap-Track-Beam Assemblies to Airbus

With the acquisition of advanced-manufacturing facilities in the United Kingdom, Dynamic Technologies became the first Indian company to establish a global manufacturing supply chain for leading international aerospace companies.

Dynamic Technologies is the single source manufacturer of Flap-Track-Beam assemblies for Airbus single aisle aircraft (A318, A319, A320 & A321) and for Airbus wide bodied aircraft A330.

Dynamic manufactures complex parts at its factories in Bristol & Swindon, UK, in Stage I machining, and completes Stage II manufacturing with artisanal craftsmanship and final assembly at its facilities in Bangalore, India, providing Airbus with global best-value Aerostructures.

It has developed a unique value proposition based on a combination of advantages that India & the UK collectively enjoy.



Complex 5 Axis Machining at Dynamic, Bristol, UK



Assembly of Flap-Track-Beams for Airbus A320 Single Aisle Aircraft at Dynamic, Bangalore, India



Dynamic CEO, Udayant Malhoutra showcasing Flap Track Beams to Prime Minister Shri Narendra Modi at Toulouse along with Airbus India Managing Director, Dr. Srinivasan Dwarakanath.



Dynatomic handed over the 150 Ship Set of Airbus A330 Flap-Track-Beams to Airbus in the presence of Klaus Richter, Executive Vice President & Head of Procurement, Airbus.

Dynatomic currently delivers close to 800 aircraft Ship Sets annually, making Dynatomic the largest producer of Flap-Track-Beams globally. The flaps on the wings, which are instrumental in controlling the speed, direction and balance of the aircraft, move along high tech guide rails known as the Flap-Track-Beams. These Flap-Track-Beams are Class-1 Flight Critical Assemblies that are connected to the wings.



Dynatomic Technologies has won the contract to manufacture the Escape Hatch Door for Airbus A220 aircraft. The contract was placed by recently established Stelia Aeronautique Canada Inc., a subsidiary of Airbus Atlantic SAS. This contract marks a milestone of workshare of the A220 supply chain in India and extends Dynatomic's capabilities for manufacturing critical aerostructure to Airbus.

"Make in India' is at the heart of our business strategy. Our partnership with Dynamics exemplifies our commitment towards setting up an aerospace ecosystem in India. We congratulate Dynamics for their high quality work. With partnerships like these Airbus' annual sourcing from India has exceeded US\$550million from more than 45 suppliers."

- Anand E Stanley, President & Managing Director, Airbus India & South Asia

Dynamic Sustainability and Business Continuity

Dynamatic worked closely with Government of Karnataka, Bangalore City Police and with local hospitals to provide onsite vaccinations to 100% of its employees, spouses and all employees within the extended supply chain. A big focus was made on Air-filtration and Decontamination, as well as on increasing ventilation in all its buildings, with extensive use of HEPA filters, UV sterilization and plasma technologies. Outgoing products were UV sterilized for customer safety.

Given the sharp decline in sales of commercial aircraft, Dynamatic quickly pivoted to accelerate production and deliveries to its defence customers. This not only protected jobs, but also reduced delivery lead-times to these customers.

Airbus selected Dynamatic Technologies from over 12,000 suppliers for the **Airbus Global Supplier Award** at the Airbus Virtual Supplier Conference held on the 29th of October 2021, for its efforts on providing 100% delivery, sustained thinking, safety implementations and practices during the Covid-19 Pandemic.



Udayant Malhoutra receiving the Airbus Global Supplier Award during his visit to Airbus in December 2021

UK-INDIA Collaborative Advanced Manufacturing



COMPLEMENTARY ADVANTAGES

United Kingdom

- Advanced Robotic 5-Axis machining
- Qualified raw material suppliers
- Low cost of Capital

India

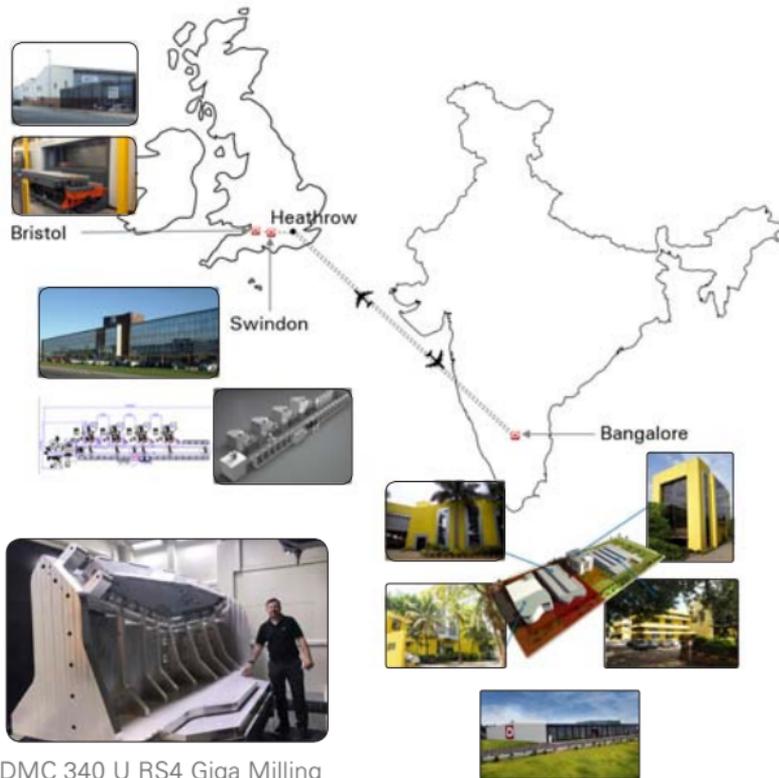
- Advanced 3D Engineering skills
- Artisanal craftsmanship
- Low cost of manpower



United Kingdom Prime Minister Ms. Theresa May
at Dynamatic Park, Bangalore on 8th November, 2016

Pioneer in Indian Private Sector
for Manufacture of **Complex Aero Structures**

Global Best Value Model



DMC 340 U RS4 Giga Milling Centre at Swindon, UK

Map not to scale.
For illustrative purposes only.



Beam of Wide Bodied Airbus A330 aircraft



Fully Autonomous Robotic Manufacturing line in Swindon, UK

Manufacturing Partner for Boeing Defense Systems

Boeing P8 Poseidon

Dynamic is Boeing's sole global supplier of Power and Mission Cabinets for the Boeing's P8 Poseidon Maritime Reconnaissance Aircraft.



Production of Boeing P8 - Mission Cabinets, Mechanical & Power Cabinets at Dynamic Technologies, Bangalore





On February 01, 2019, Dynamatic Technologies Limited handed over the 100th Shipset of Boeing P8 Power Cabinets in presence of Ms. Kim Pastega, Vice President, Enterprise Supply Chain Delivery & Performance, Boeing and Mr. Ashwani Bhargava, Director, Enterprise Supplier Management, Boeing India and Dynamatic Senior Executives.

Boeing CH-47 Chinook Helicopter

Dynamatic manufactures the Aft Pylon Assembly and Cargo Ramp Assembly for the Boeing Chinook CH-47F Helicopter.



Ms. Shelley Lavender, President, Boeing Military Aircraft along with Udayant Malhoutra at Dynamatic, Bangalore



"In September 2014 Dynamatic Technologies and its collaborator Boeing inaugurated a plant in India to manufacture critical parts for a Boeing helicopter that is sold globally. I understand that it was a day after Make in India was launched. I am pleased to learn that the first set of parts is ready for shipment today".

- Hon. Prime Minister Shri Narendra Modi at inaugural speech of AERO INDIA 2015



Dynamic Assembly Line for Boeing Chinook CH47F



US-INDIA Collaborative Aerospace Industrialisation

Boeing CH-47 Chinook Helicopter

Dynamatic-Oldland Aerospace® manufactures the Aft Pylon Assembly (right) and Cargo Ramp Assembly (left) for the Boeing Chinook CH-47F Helicopter, which is Boeing Defense Systems' largest export programme out of India.



M/T

THE 11-4XD-400-A1

UNIT 001-4



Boeing T-7A Red Hawk

Dynamatic has been awarded a contract for the delivery of tools for the Static and Fatigue Testing of the control surfaces of the Boeing-SAAB T-7A Red Hawk Program.

The T-7A Red Hawk is an all-new advanced pilot training system designed for the U.S. Air Force that will train the next generation of fighter and bomber pilots for decades to come.

Produced using advanced manufacturing techniques and built along a digital thread, the T-7A aligns with the U.S. Air Force's new eSeries strategy by enabling design, coding and testing faster and more affordable through a digital matrix.



The completion of Boeing T-7A Whiffletree Assembly was witnessed by Dr. Bala Bharadvaj & Mr. Ashwani Bhargava from Boeing.

Boeing's F-15EX Eagle II Fighter Aircraft

Dynamatic Technologies has been awarded a contract for manufacturing assemblies for Boeing's newest tactical fighter, F-15EX Eagle II. This is a first where aerostructures for the the latest and most advanced F-15EX Eagle II will be made in India. This contract has given a boost to the Aatmanirbhar program and strengthens US-India collaboration on aerospace and defence industrialisation. Dynamatic Technologies will supply the F-15EX aerostructure assembly requirements from FY 2022. Dynamatic will manufacture these aerostructures from their manufacturing facility in Bengaluru, Karnataka. Recently, we delivered the First Ship Set of the Boeing F-15 Assembly.



(Left to Right) Mr. Ravichander V, Global Co-COO Dynamatic-Oldland Aerospace®, Mr. Pierce Lehr, Vice President - BDS Bombers and Fighters, Supply Chain, Mr. Salil Gupte, President, Boeing India, Dr. Udayant Malhoutra, CEO & Managing Director, Dynamatic Technologies Limited, Mr. Pratyush Kumar, Vice President - F15 Program Manager, Boeing International, and Mr. Ashwani Bhargava, Director - Supply Chain, Boeing India

"We see tremendous potential for India to contribute to the global aerospace industry as an industrial and technology partner. The award of aerostructure assemblies for the latest and most advanced version of the F-15 aircraft family is a reflection of Boeing's focus on Aatmanirbhar Bharat and a testimony to the world-class capability of our industrial partners in India."

- Salil Gupte, President, Boeing India



On April 07, 2022, Dynamatic Technologies Limited handed over the 150th Shipset of Boeing P8 Power Cabinets in presence of Mr. Pratyush Kumar, Vice President - F15 Program Manager, Boeing International, and Mr. Ashwani Bhargava, Director - Supply Chain, Boeing India and Dynamatic Senior Executives.



On April 07, 2022, Mr. Pratyush Kumar, Vice President - F15 Program Manager, launched the first assemblies production for Boeing's F-15EX Eagle II Fighter Aircraft.

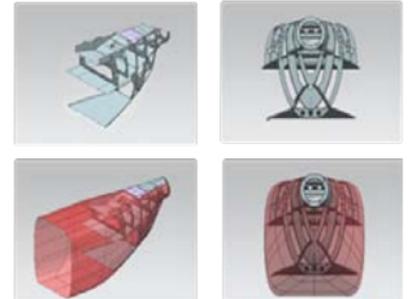
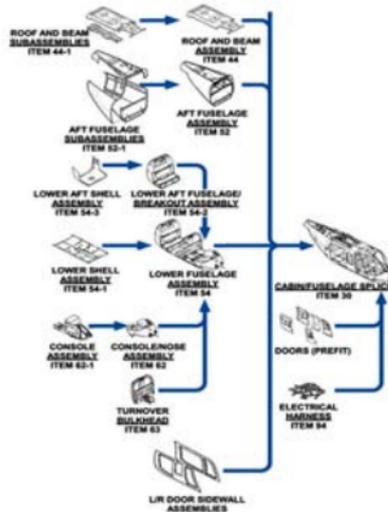
Manufacturing Partner for Bell Textron Inc.

Bell 407 Fuselage Assemblies

The Bell 407, is one of the world's largest selling helicopters. Dynamatic Technologies has been contracted as a single-source supplier of Major Airframe Assemblies for the Bell 407 Helicopter (shown below) for the 'life of program'.



Major Assemblies to build the complete Bell 407 Cabin



The industrialisation program at Dynamatic has involved digitisation of over 2000 detail parts, followed by development of tooling, processes and part manufacturing. We have now taken up the 5 major fuselage assemblies and has supplied over 125 ship sets.




DYNAMIC
TECHNOLOGIES



US-INDIA Collaborative Aerospace Industrialisation

Bell 407 Helicopter

Dynamatic-Oldland Aerospace® is the global single-source supplier of Major Airframe Assemblies for the Bell 407 Helicopter



Dassault Rafale

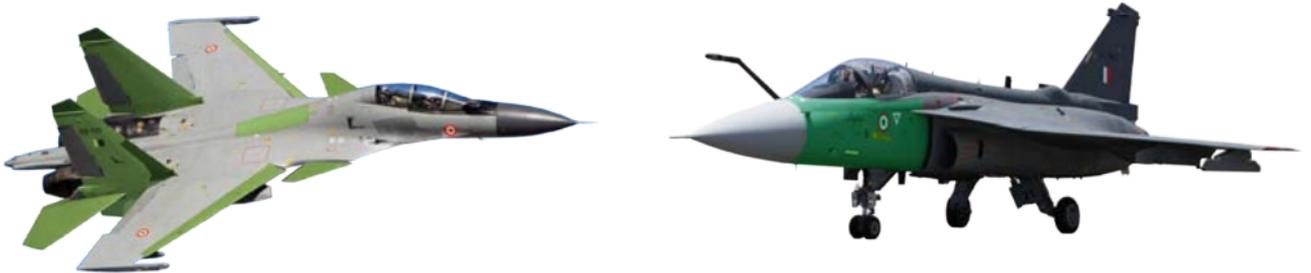


Induction of Dassault Rafale fighter jets will provide the Indian Airforce with potent multi-role, multi-mission defence capabilities. Dynamatic is building high precision assembly and conformance jigs for Dassault under the Make-in-India initiative.



Pioneer in Indian Private Sector for Manufacture of **Complex Aero Structures**

Dynamic is a work-share partner with HAL on the Sukhoi 30MKI, India's largest Aerospace Defence Program. Over 1/6th of the airframe structure, including critical control surfaces (shown below) are manufactured by Dynamic at its facility co-located at HAL-Nasik, and is the largest PPP for manufacturing between HAL & Indian private sector. Today, Dynamic has the largest infrastructure in the Indian Private sector for the manufacture of exacting Air Frame Structures and Precision Aerospace Components. First in the private sector to secure AS 9100 quality certifications & NADCAP certifications for its Non-Destructive, Heat Treatment, Welding facilities and Measurement and Inspection.



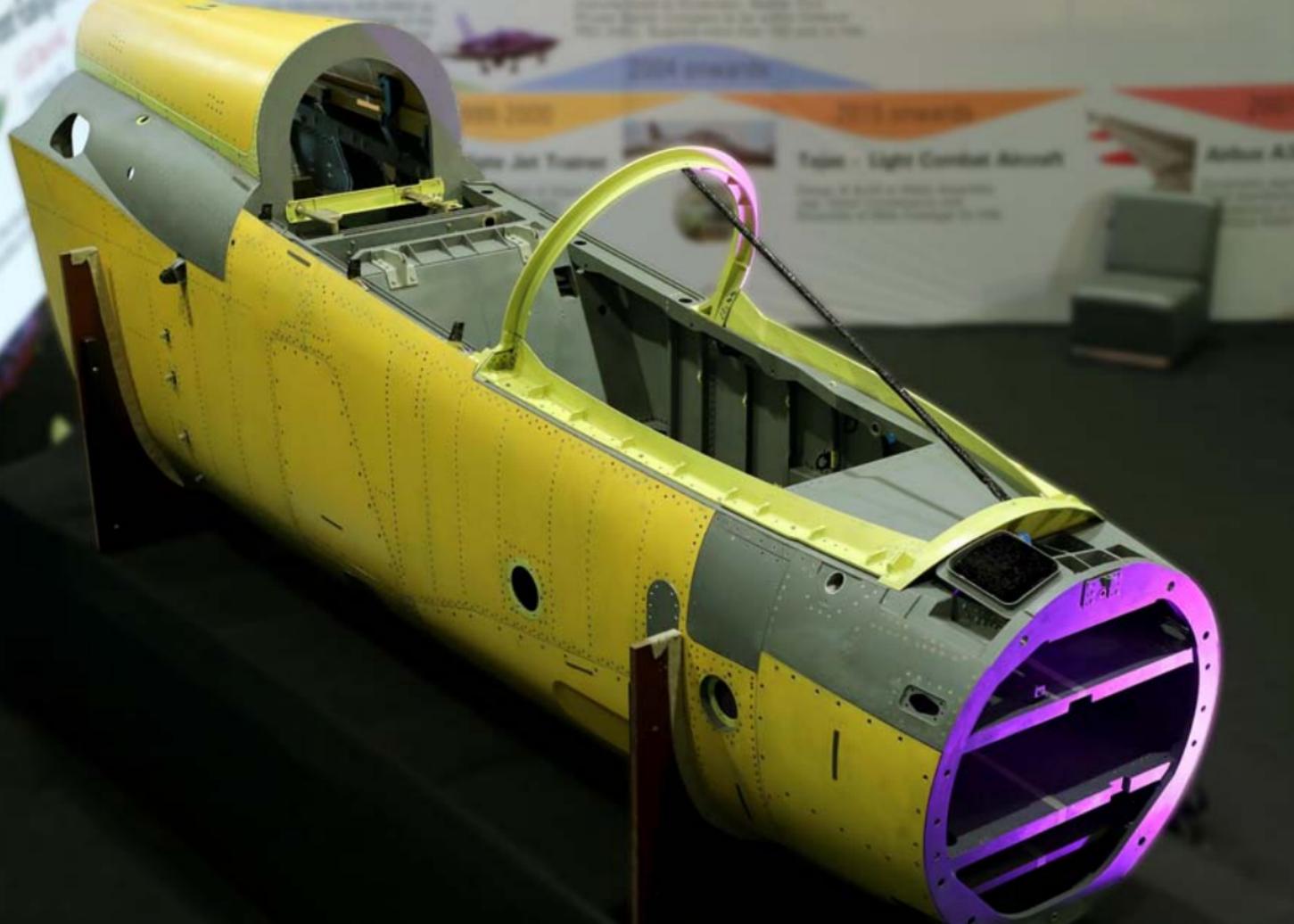
Dynamic has been chosen as the supplier for Tejas Light Combat Aircraft (LCA) Front Fuselage Assembly from Hindustan Aeronautics Limited (HAL) - LCA Division. This is a long term contract for Dynamic, which includes manufacturing of detail parts and Assemblies along with the jigs and fixture requirements.

Dynamic has built the first front fuselage for the FOC version of the Tejas Light Combat Aircraft (LCA). This is the first time a complex fuselage section for a supersonic fighter aircraft has been built by a private sector company.

Dynamic has been a preferred production partner for Hindustan Aeronautics Limited (HAL) for over three decades on all their major platforms.

The completion of the First Front Fuselage was witnessed by Mr. R. Madhavan, Chairman & Managing Director and other Senior Executives from HAL. The event was virtually addressed by Dr. Ajay Kumar, Defence Secretary, Government of India.



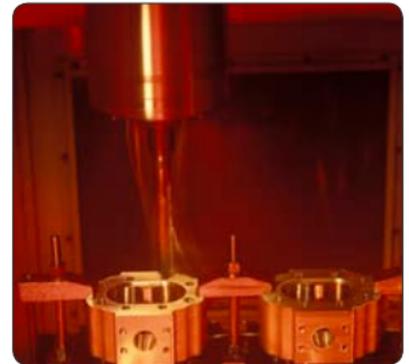


The world's leading producer of Hydraulic Gear Pumps

Dynomatic Hydraulics®, a division of Dynomatic Technologies Limited, is the world's largest producer of Hydraulic Gear Pumps. Its state-of-the-art manufacturing facilities are located in Bangalore, India, and in Swindon, U.K.

Dynomatic Hydraulics®, India, produces a wide range of custom tailored Hydraulic Solutions extending from simple Hydraulic Pumping Units to complex Marine Power Packs and Aircraft Ground Support Systems to Turnkey Industrial Installations. The Company also supplies India's Defence Forces with the Hydraulic Transmission System including the Steering Control System, Turret Control System and Brake Actuating System for the Main Battle Tank.

Dynomatic Hydraulics® enjoys very high brand recognition in USA, Europe, India and ASEAN, having built up a large and sustained market share in the Tractor OEM and after sales markets as well as the Industrial Pumps market. The Company has an extensive marketing network, with marketing, sales and servicing branches in all key cities and dealers and distributors across the world. Apart from selling pumps and motors which are proprietary in nature, the marketing network trades certain special products such as Industrial and mobile control valves and filter elements.





Sole Supplier of Hydraulic Gear Pumps to Global OEMs

The Dynamatic Technologies facility in Swindon, UK, designs and manufactures Gear Pumps and Piston Pumps for Agricultural, Construction and Off Highway Vehicle manufacturers. The UK unit specialises in Combined Variable and Fixed Displacement Pump Packages, Temperature Controlled Fan Drive Systems and Fixed Displacement Pumps in Aluminium and Cast Iron with a range of additional integrated valve options.

Dynamatic has embraced design thinking as a core philosophy with state of the art R&D capabilities, which serve as reliable enablers of value for the enterprise. The JKM Science Centre in Bangalore and Dynamatic Engineering Laboratory in Swindon, UK, house Hydraulic Research and Development Centre with highly qualified research engineers working with the most advanced and sophisticated tools for design and analysis and well equipped labs to conduct validation tests including noise level tests, killer tests, endurance tests, cyclic test, constant load test, high temperature test.



**One out of five
Agricultural Tractors
produced anywhere in the
world are factory-fitted
with Dynamatic Pumps**



State-of-the-art Robotic Manufacturing. 650 year old legacy



Eisenwerk Erla GmbH is a preferred supplier of Precision, Complex Metallurgical Products for Automotive Engines and Turbochargers to leading Global Automotive OEMs and Turbo Charger Companies including Audi, BMW, Borg Warner Turbo Emission Systems, Bosch Mahle Turbo Systems, IHI Charging Systems, Volkswagen and Daimler.

The Eisenwerk Erla site, which has been in business for over 630 years, possesses one of the finest Ferrous Foundries in Europe capable of manufacturing extremely intricate Ferrous and Steel castings from difficult-to-cast materials, as well as strong R&D capabilities with patented technologies specific to the automotive industry.

The First Machining Facility was inaugurated at Eisenwerk Erla GmbH, Germany on 11 November 2016, by the Board of Directors, Dynamatic Technologies Limited.

This is a fully robotised facility for machining at Erla, which incorporates the latest technological innovations and will allow Dynamatic to increase its competitiveness in manufacturing high volume precision parts for BMW.



Advanced Robotic Manufacturing line at Erla, Germany

Research & Development Lab, India

The **JKM Science Center** in Bangalore, India, houses the Dynamic Research & Development Center, as well as a sophisticated Material Sciences Laboratory, which are engaged in:

- Design and Prototyping of new products
- Improvement of existing designs
- Continuous improvement of existing processes
- Ongoing testing of products and materials product value to its customers.

At Dynamic, creation of new products and applications are not mere projects, but a part of daily life.

Dynamic Research & Development Center, India

The Dynamic Research & Development Center is completely electronic, utilising state-of-the-art parametric 3D design programs and knowledge based expert systems.

The Center has been a 'Recognized In-House R&D Unit' certified by the Department of Scientific and Industrial Research (DSIR), Government of India, since 2001.





Material Science Lab, Germany

Dynamic also has an advanced **Material Science Laboratory**, in Erla, Germany, and holds several patents on special metals and alloys with high thermal capabilities.

Testing Lab, UK

The **Dynamic Engineering Laboratory**, in Swindon, U.K, possesses advanced design knowledge for the Mobile Hydraulics Sector, and has comprehensive product testing and validation capabilities.

Quality Accreditations

Accreditations of Dynamic Oldland Aerospace®

- AS9100:2016 - Aerospace Quality Management System
- ISO 14001:2015 - Environmental Management System (EMS)
- ISO 45001:2018 - Occupational Health and Safety Management System (OH&S)
- ISO / IEC 27001 : 2013 - Information Security Management System (ISMS)
- NADCAP - Heat Treatment, Non-Destructive Testing, Welding, Measurement & Inspection, Chemical Processing

Accreditation of Dynamic Medical®

- ISO 13485:2016 Approved - Medical Devices (Quality management systems - Requirements for regulatory purposes) with the scope of Design, Manufacture and Supply of Medical Devices.

Accreditation of Dynamic Biosecurity Laboratory

- ISO 15189:2012 - National Accreditation Board for Testing and Calibration and Laboratories (NABL) for Medical Testing



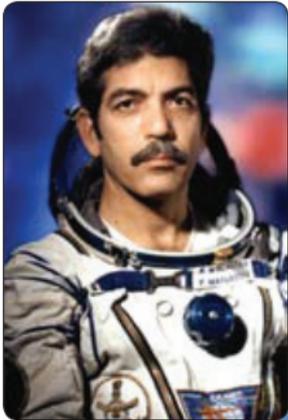


Expansion Facilities



On 15th February, 2017, Dynamatic opened the First Hangar at Dynamatic Aerotropolis next to the Bangalore International Airport, which was inaugurated by **Mr. R V Deshpande**, Minister for Large & Medium Industries & Infrastructure Development, **Hon Sir Dominic Anthony Gerard Asquith**, British High Commissioner, Ms. MaryKay Loss Carlson, Charge d'Affaires at the U.S Embassy & **Udayant Malhoutra**, CEO & Managing Director, Dynamatic Technologies Limited.

It is the first state-of-the-art plant on the sprawling 28 acre Dynamatic Aerotropolis.



(Left) Air Commodore Ravish Malhotra, Cosmonaut and Chief Test Pilot (IAF)

(Right) Udayant Malhoutra at Tezpur AFB in a SU-30 MKI along with Ravish



The Hangar was named as '**The Ravish Malhotra Hangar**' named after **Air Commodore Ravish Malhotra** in consideration of his service to the Nation and to Dynamatic Technologies.

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Indian Origin Global Brand

