



TOOLING DESIGN & MANUFACTURE

Engineering ideas into reality

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ABOUT US

INTRODUCTION

Morson Projects are a reputable multi-disciplinary engineering consultancy with over 40 years' experience across the UK and overseas.

Our highly qualified engineering teams deliver capability and experience across numerous engineering disciplines, enabling the provision of complete end-to-end project management, design and delivery services to our valued long-term client partnerships.

We support our clients across six key sectors:

- Aerospace & Defence
- Industrial & Process
- Infrastructure & Transportation
- Marine
- Nuclear
- Power & Renewable Energy

Our team offers a vast range of multi-disciplinary solutions to these sectors through three long-established brands: Morson Projects; Ematics and Waldeck.



OUR PEOPLE

Our Tooling Design & Manufacturing capability is built around a core team that specialises in the complete project management of complex tooling projects for clients across many industries.

Our team are primarily based at our Manchester and Belfast Offices, with our colleagues from the wider team operating across nine project delivery offices throughout the UK and Europe. We are also able to utilise the wider network of Morson Group offices worldwide, including North America and Australia.

PART OF THE MORSON GROUP

Morson Projects are an integral part of the Manchester born Morson Group. The Morson Group which was founded in 1969 is a unique blend of resourcing and engineering consultancy businesses.

TURNOVER

£1 BILLION

OFFICES

96

FOUNDED IN

1969

RESOURCE DEPLOYED

14,000

OUR EXPERTISE

HOW WE CAN HELP

Our Tooling Design & Manufacture team delivers solutions to industry including major assembly jigs, test rigs, general machine shop tooling for aerospace and non-aerospace components, special purpose machine design, automotive transfer lines, operational tooling, composite aircraft tooling, gas turbine tooling and industrial and nuclear tooling.

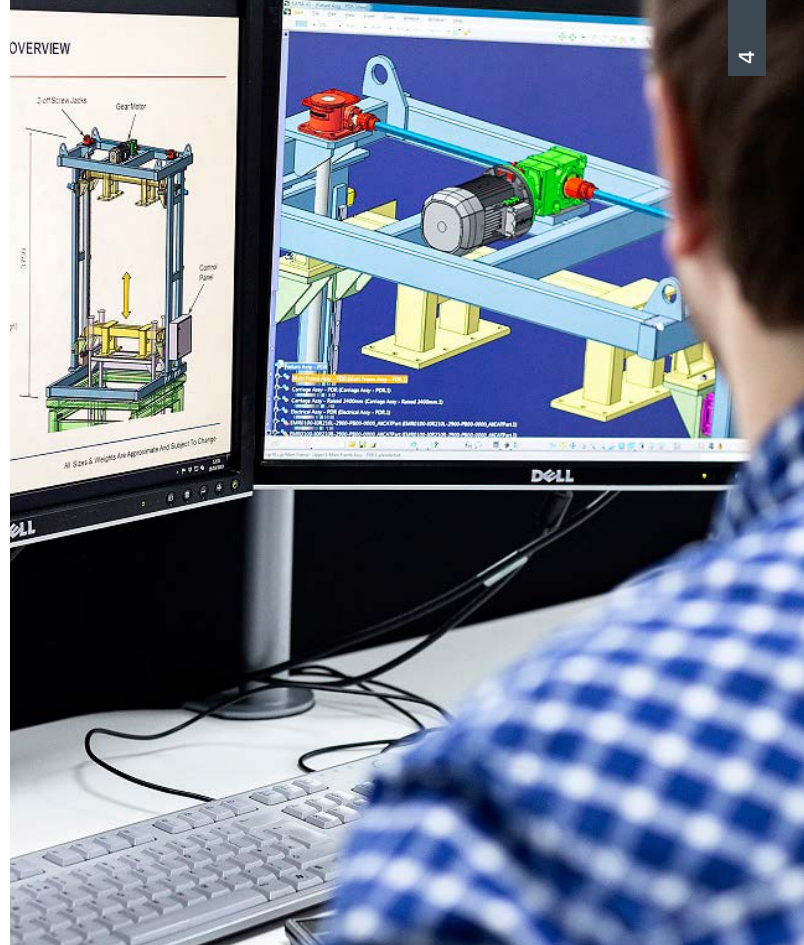
Morson Projects utilise ISO and client approved tooling manufacturers, supported by the team's project engineers who manage the manufacture, delivery, installation, and documentation throughout the product lifecycle. Our turnkey offering allows customer to focus on delivering their core business while we do the tooling works.

Our team we run a multitude of different design packages, enabling us to use the same CAD software as clients for consistency, we are able to work to either our clients design standards or our own in-house methodology and have the capability to draw on internal resource for all supplementary engineering support .

Morson Projects are a true independent engineering consultancy with an established manufacture supply chain, and as a result are to place the right project with the right company.

A-Z of Services

- 4 & 5 Axis CNC Holding Fixtures
- Additive Manufacture
- Assembly Lines & Production Cells
- Assembly / Sub Assembly Tooling
- Augmented Reality
- Automation Systems
- Bespoke Storage Solutions
- CE Marking
- Composite Mould Tools
- Conceptual Design Through
- Drill Jigs
- Drill Templates
- Factory Layout & Site Survey
- General Machine Shop Jig & Tool Design
- Ground Support Equipment
- Inspection Fixtures
- Installation & Commissioning Support
- Lay-Up & Bonding Tools
- Lifting/ Handling Equipment
- Master Gauges & Dummy Components
- NC Programming
- Operational Maintenance Manuals
- Simulation & Virtual Reality
- Special Purpose Machinery
- Staging & Access Platforms
- Structural & Stress Analysis
- Test Fixtures & Equipment
- Training
- Transportation Fixtures
- Tool Design for Additive Manufacture
- Turnkey Solutions



CASE STUDIES

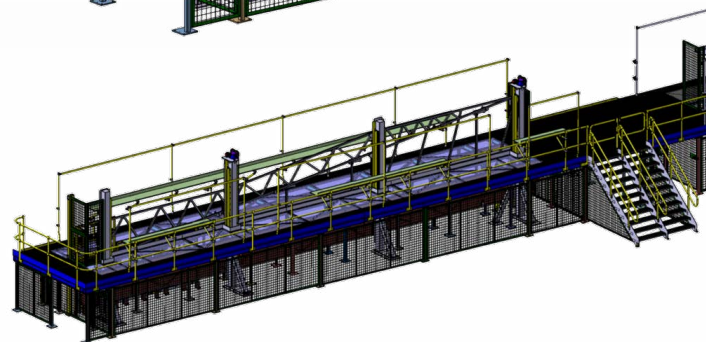
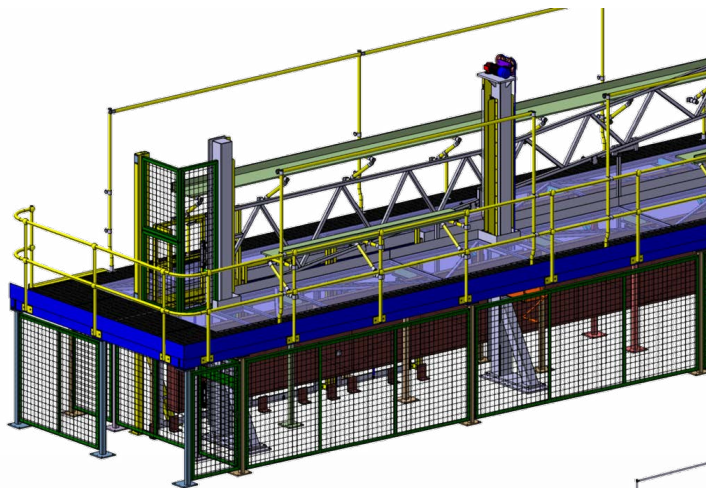
Airbus

VERTICAL WORKSTATION

Morson Projects were appointed by Airbus to support them with the design a large workstation, used to position an A320 aircraft wing panel at an ergonomic height during assembly operations and sealant application.

Our team redesigned the existing fixture to meet current legislation, including health and safety legislation, CE marking, and ergonomic requirements. The design was completed to our client's requirements, ensuring that the updated components were incorporated into the existing structures.

The design featured light curtain, safety rails and extensive guarding in order to protect operators from harm whilst maintaining functionality. The workstation was also designed to include emergency exits from caged area below working level. An electrical lockout procedure was also installed to protect personnel during maintenance operations.



VALUE:
£80,000

LOCATION:
BROUGHTON

DURATION:
10 MONTHS

RACE

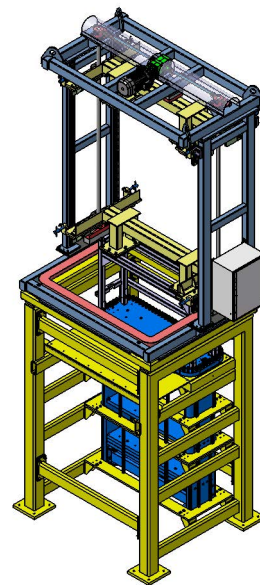
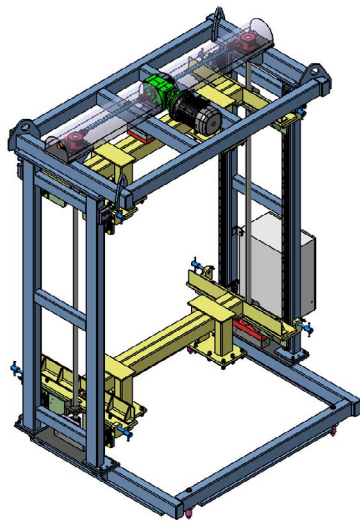
DUMMY TBM FIXTURE

Morson Projects were appointed by client, RACE, to design a new support fixture that would integrate into the existing frame which could be used to secure and accurately raise and lower a RACE dummy TBM to specified positions.

Our team created a bespoke design that featured a fabricated frame to support a motor and lead screw assembly. A carriage then supports a dummy TBM while it is raised and lowered. It's overall size was approximately 3600mm x 2700mm x 1470mm, with a weight of 8000kg.

Our work included a full stress analysis to ensure suitability and compliance with regulations. Documents were also produced to support the design, including stress reports, operation manuals and certificate of incorporation.

Our team also provided a full PLC driven control system, including control software, interface and all necessary safety features, such as limit switches and fail-safe systems.



VALUE:
£50,000

LOCATION:
CULHAM

DURATION:
10 MONTHS

Siemens

GSOC TRANSPORT STANDS

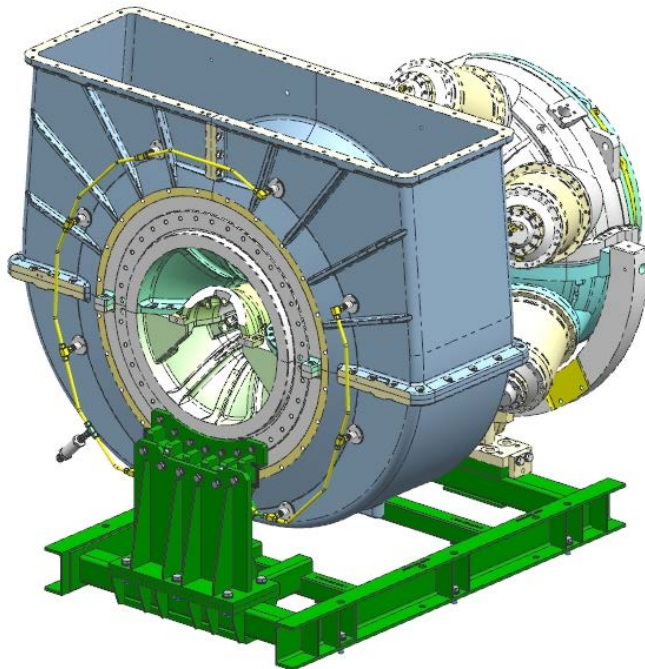
Morson Projects were appointed by Siemens to support them with the design of six new transport stands.

The stands were designed to securely hold a single gas generator or power turbine during transport by land, air, sea or rail.

The stands were created in a variety of sizes, with the largest being approximately 2000mm x 1280mm x 800mm.

A bespoke design was created for each stand, featuring removable adaptor plates to ease installation of the engine or turbine. The fixture was designed to withstand the various loading conditions during air, land, sea or rail travel.

Our team carried out a full stress analysis/investigation, including FEA analysis, conducted to ensure suitability and compliance with regulations. Our team also supported the trail tests on site for the prototype stands in order to ensure their functionality and suitability.



VALUE:
£125,000

LOCATION:
LINCOLN

DURATION:
12 MONTHS

Airbus

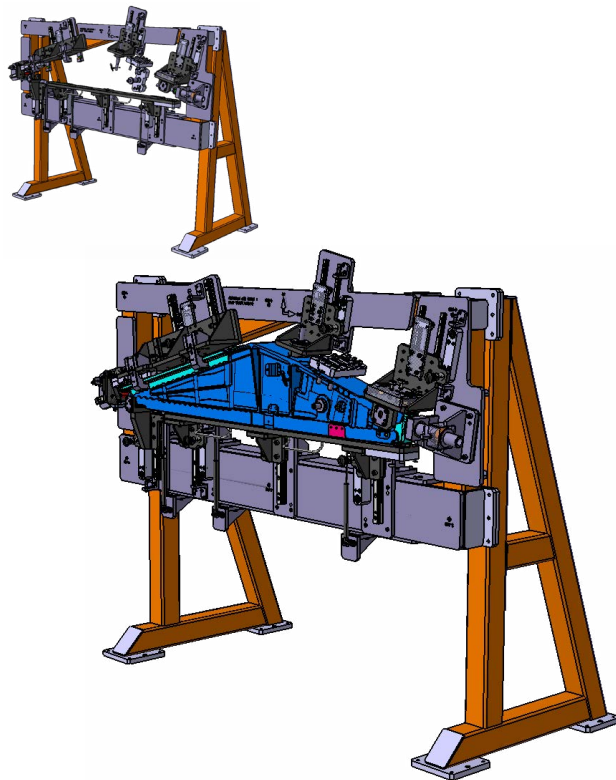
FLAT TRACK BEAM ASSEMBLY JIGS

Morson Projects were appointed by Airbus to design a set of three Flat Track Beam Assembly Jigs used to facilitate the various assembly stages of the Airbus component.

Our team created a bespoke design that featured a fabricated frame and several slidable brackets. The component is installed to the fixture before the various items are mounted to the sliding brackets, then moved into position and secured.

The overall size of the jigs were approximately 2080mm x 1650mm x 940mm.

Our team also produced a complete set of supporting documents for the design, including operation manuals.



VALUE:
£50,000

LOCATION:
PRESTWICK

DURATION:
8 MONTHS

General Electric

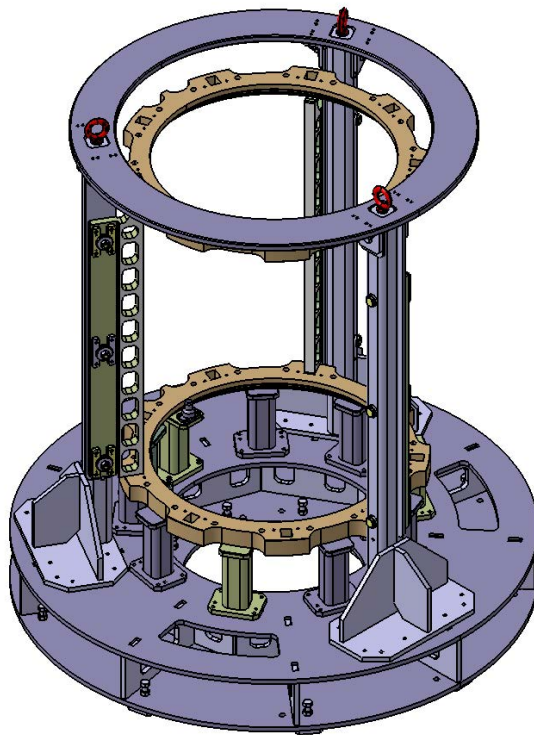
INNOVATE CORE BUILD FIXTURE

Morson Projects were appointed by General Electric (GE) to design a new build and lifting fixture, used for facilitating the assembly and lifting operations for a GE innovate stator core.

Our team delivered a unique design that featured multiple profile boards use to facilitate the various build stages of a stator core. Fixture designed to withstand the high temperatures used to finish the core assembly process.

Our team carried out a full stress analysis and investigation conducted to ensure suitability and compliance with regulations. A complete technical file supporting the design also produced by our team, including stress reports, operation manuals and CE marking.

The overall size of the new fixture was approximately $\text{\O}2000\text{mm} \times 2095\text{mm}$.



VALUE:
£25,000

LOCATION:
RUGBY

DURATION:
6 MONTHS

OUR CLIENTS



OUR CREDIBILITY

Morson Projects' policy is to consistently provide effective and efficient solutions to our vast client base. We achieve this through the effective application of our Quality Assurance Management Systems and our commitment to processes for continual improvement.

Our Business Management System (BMS) complies with the requirements of EN ISO 9001:2015. This is applicable to our Manchester Head Office. Our BMS also satisfies the requirements of AS/EN 9100 for use on Aerospace projects at our Manchester office.

Implementation and management of the system involves personnel at all levels throughout the company; the education and understanding of quality awareness, cost-effectiveness and customer requirements to our employees are key to the successful application of our system.



KEY CONTACTS



JAMES TETLEY

Jig & Tooling Manager

Telephone: 07900 146155

Email: james.tetley@morson-projects.co.uk

KEEP IN TOUCH

Manchester (HQ)

Darwen House
37 Liverpool Road
Irlam
Manchester
M44 6EB

Belfast

10B Weavers Court
Business Park
Linfield Road
Belfast
BT12 5GH

Brough

Mercury Ground Floor West
Building 78
Humber Enterprise Park
Aviation Way
Brough
HU15 1YJ

Bradford

The Dye House
Dye House Drive
West 26 Business Park
Cleckheaton
BD19 4TY

Chester

Unit 14
Aviation Park
Flint Road
Chester
CH4 0GZ

Newcastle

Washington Business
Centre
Turbine Way
Newcastle
SR5 3NZ

Rosyth

Building No 1.
Caledonia Way
Rosyth Business Park
Rosyth
KY11 2YD

Westlakes

Kelton House
Westlakes Science &
Technology Park
Cumbria
CA24 3HX

Yeovil

Dolphin House
21 Hendford
Yeovil
Somerset
BA20 1TQ

0161 707 1516

www.morson-projects.co.uk

@morsonprojects