



CNC Machining





Extensive CNC milling and CNC turning facilities operated by our highly skilled team of engineers and computer aided manufacturing experts.

Contents

Introduction

Case study 1 – Hydraulic Manifold



Case study 2 – Aircraft Model



Case study 3 – CNC Machined Castings



Introduction

CNC machining is one of J H Mays key services and enables us to offer prototype, model making and production service to a wide range of clients.

Highly complex parts can be CNC machined in a wide range of materials – from plastic through to exotic metals like titanium and nimonic. Similarly, CNC milling can be utilised to produce large scale industrial models or concept models in model board or foam.

In all cases the CNC milling machines and CNC turning machines can be programmed directly from the client's 3D model data. Our CAM (Computer Aided Manufacture) engineers are used to working closely with designers to ensure that CNC machined components or models are efficiently produced in the shortest possible time.



Aluminium CNC machining direct from 3D model



CNC milling of concept model



Large scale CNC machining

Case Study 1

Project

Prototype Hydraulic Manifolds

Client

Eland Engineering

The Brief

To CNC machine a series of prototype hydraulic manifolds for a new design of friction welding machine.

The Solution

Using the clients 3D CAD model and drawings we programmed the parts using our Delcam CNC machining software. The large size of these manifolds demanded use of our largest CNC machining centre. Machining was required on all faces, the large threads being thread milled. The biggest challenge was the depth of the oil galleries and ensuring that oil ways connected correctly at a depth of 500mm.



CNC machining of large hydraulic manifold



Mainfold CNC machined on our largest Haas VF7



Ancillary manifold CNC machined from 3D model data

Case Study 2

Project

VTOL Aircraft Model

Client

Falx Air

The Brief

To produce a scale model of our clients revolutionary vertical take off and landing aircraft to be displayed at commercial and defence exhibitions.

The Solution

Using the clients 3D model data the main body, main wing and rear wing were split into individual sections. The main fuselage was CNC machined in two halves and dowelled together. The main wing and rear wing as well as the landing rails were CNC machined from one piece solid high density modelling board. The 3D CNC machined surface of the model required a small amount of hand finishing prior to paint finishing.



3D CNC machining of the wing section in Ureol



Model in progress



Finished 3D model in Police livery

Case Study 3

Project

Woolgate Exchange Machined Castings

Client

Wintech

The Brief

To produce a large quantity of aluminium parts to be the main façade feature of a major City of London office building. The architect was very keen to ensure that all the components had sharp and well-defined features typical of CNC machining.

The Solution

Using the clients 3D model data we CNC machined wooden patterns which were in turn used to make aluminium sand castings of the 8 different pieces.

Each casting was then CNC machined all over to give the required finish. The round casting pictured was CNC turned with the flutes milled using the machines live tooling feature.

The square section components were machined on all faces using a 4th axis CNC indexer.



CNC machining of main façade casting



CNC machining of main support casting



Woolgate Exchange in the City of London