

CREATIVE INDUSTRIAL DESIGN



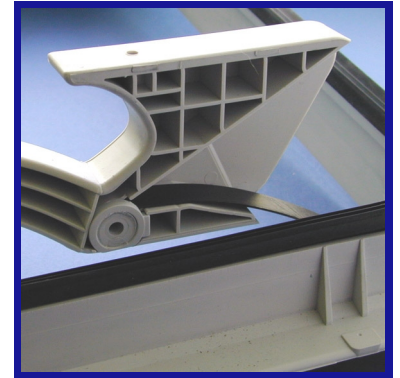
- ▶ Industrial Design
- ▶ Product Graphics
- ▶ Mechanical Engineering
- ▶ Concept Visualisation
- ▶ Sheet Metal Design
- ▶ Rapid Prototyping

MECHANICAL DESIGN



- ▶ Thermal Management
- ▶ Vibration Mounting
- ▶ IP65/NEMA 4X Sealing
- ▶ Injection Moulded Parts
- ▶ Functional Prototypes
- ▶ Sand Cast Parts

ENGINEERING SERVICES



- ▶ Project Management
- ▶ Reverse Engineering
- ▶ 2D & 3D CAD Drawings
- ▶ Value Engineering
- ▶ Plastic Fabrication Design
- ▶ Production Engineering

Product Development

Our approach

Industrial Design is the professional activity by which we design products for manufacture incorporating an innovative approach and styling to realise benefits for you and your customers. This involves technical decisions to ensure our design proposals use materials and technology effectively and comply with all legal and regulatory requirements.

As designers we are trained to prepare clear and concise proposals through drawings, models and discussions. Our contribution places emphasis on those aspects of the product that relate most directly to user requirements and interaction including; visual, tactile, safety and ergonomics criteria.

Our proposals will ensure all the elements of a product will fit and fix together and reflect the value of the product. Our decisions will be guided by your requirements for marketing, production, quality, servicing and economic factors to encourage ownership in your target market.

Project planning

Planning is vital to success and the avoidance of feature creep. This is how we do it;

- ▶ Specification of requirements
- ▶ Concept generation
- ▶ Certification and documentation
- ▶ Market research
- ▶ Research and development
- ▶ Product innovation
- ▶ Prototyping and validation

Quality engineering design

Good engineering is the foundation of every successful product. 3Minds design products that look good but beneath the surface we believe they should also be well engineered.

Industrial Design and Development

The physical structure of a product must be robust enough for its purpose without being so over engineered it is not competitive in its market. This fuses our knowledge of materials, manufacturing processes, environmental conditions and cost variables.

We specialise in engineering for tough environments including, sandcast and machined aluminium, injection moulded thermoplastics, sheet metal work using mild steel and stainless steel as well as fabrication technologies for a range of plastics. We also offer our expertise in ingress protection for IP67 and NEMA 4X environments including gasket design in a range of materials.

Rapid prototypes

The design of any product may be improved by the use of model making and prototyping for;

- ▶ Ergonomic and form analysis
- ▶ Design validation and user trials
- ▶ Pre-production

Aside from the traditional model making techniques there are a number of Rapid Prototyping technologies which produce parts direct from 3D model data. Each with its own merits and limitations these include;

- ▶ Stereolithography in epoxy resin
- ▶ Fused deposition models in ABS
- ▶ Selective laser sintering in PA

Product Validation

During validation we test to make sure the product is functionally right and worthy of the greater investment required for taking it into manufacture. We are able to supply additional prototypes for your marketing activity. Using rapid prototypes as masters we can realise parts as;

- ▶ Vacuum castings
- ▶ Polyurethane castings
- ▶ Investment castings

It should also be noted that these processes allow designers to evaluate their designs in materials with similar properties to injection moulded components. Polyurethane parts may also be acceptable for small batch production.

Computer aided design

At 3Minds we use the latest 3D-CAD which helps us to translate our initial thoughts and concepts into an electronic solid model. This virtual model will help you to visualise the design and help us to realise the component parts and ensure that they will fit together. We have many years of experience in using 3-Dimensional Solid modelling software including industry standard packages such as Solidworks® and Autodesk® products.

As we review the design with you and move toward parts which we want to manufacture as prototypes we can use the solid model/s by converting them to files which can be sent to a rapid prototyping bureau or CNC machinist. These processes are particularly powerful for reducing the design cycle and time to market.

Production engineering

If you are making product that is not fully documented, you are exposed to an inconsistency of manufacture, particularly if made by different manufacturing cells or you experience frequent staff turnover. 3Minds has all the relevant skills to document your product and liaise with suppliers to take it successfully into manufacture.

We can provide full manufacturing documentation including;

- ▶ 2D drawings
- ▶ 3D rendered images
- ▶ 3D exploded views
- ▶ 3D Animations
- ▶ Assembly Instructions and Photographs

For further information or for your free quotation please call today on 0845 680 1024 or email sales@3minds.co.uk



3MINDS

Developing
your
business,
by design.



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