

PRECISION PLASTIC COMPONENTS

Providing superior custom molded solutions

With our broad design and manufacturing capabilities, Unisteel is the go-to partner for many global industry leaders in semiconductor, optoelectronic and consumer markets. Our full fledged manufacturing facilities are equipped with 30 ton to 230 ton state-of-the-art vertical and horizontal injection machines harnessing the latest injection-compression technology which ensures that the highest quality precision plastic components are made to exacting specifications, every time.

Insert Molding

Insert molding is a special injection molding process where thermoplastic materials are tightly molded around another component such as pre-formed plastic or metal insert, to form a single viable product

At Unisteel, we have extensive experience designing tools for insert molding. With mold design being an important factor in this process, our engineers use the latest in CAD and machining software packages to design and build injection molding tooling and fixtures.

Features & Benefits

- Increased design flexibility as insert molding allows for unlimited configurations
- Minimal scrap loss
- Increased reliability as the tightly- bonded insert molded component prevents part loosening and misalignment etc
- Reduced need for post-mold operation

Applications

- Illuminated logos for consumer electronics
- Sensor pads for navigational products



Plastic Injection Molding

Plastic injection molding creates precision thermoplastic parts to mold exact shapes and features for use in any application.

Equipped with technical know-how and cutting edge manufacturing technology, Unisteel excels in precision molding of close tolerance components; right down to miniature products such as camera lens holders and spacers. As an integrated solutions provider, we can work with customers' product development team to offer professional recommendations including selection of ideal thermoplastic for their applications.



Features and Benefits

- Capable of manufacturing to very fine tolerances of extremely small parts and components, measuring as small as 1cm³ and weighing 0.1 to 0.01 grams or less
- Increased design flexibility as precision molding allows for unlimited configurations

Applications

- Micro lens holders and aperture plates for mobile phones and cameras
- Mouse clips for computing peripherals
- Anti-disks and protective covers for HDD applications

Material Selection

Plastic molding material selection can affect the performance of the plastic part in terms of tensile strength, temperature resistance, appearance, life-span, reliability and production cost. Here at Unisteel, we support a wide range of materials and can help customers in selecting the ideal materials to get the most out of your products.

Material	ABS (Acrylonitrile Butadiene Styrene)	PMMA (Polymethylmethacrylate)	POM (Polyoxymethylene)
Features & Benefits	<ul style="list-style-type: none"> • Amorphous copolymer • Good impact strength and appearance • Commonly used in computer housings, small appliances, automotive interior trim and medical components 	<ul style="list-style-type: none"> • Amorphous polymer with superb clarity • Excellent weather durability for outdoor applications • Ideal for use in optical applications 	<ul style="list-style-type: none"> • Semi-crystalline polymer with excellent lubricity • Good resistance against chemical and fatigue • Suitable for demanding industrial applications
Material	LCP (Liquid Crystal Polymer)	PC (Polycarbonate)	PPS (Polyphenylene Sulphide)
Features & Benefits	<ul style="list-style-type: none"> • Aromatic polyester-based chemistry • Tensile strength and modulus are close to aluminium 	<ul style="list-style-type: none"> • Amorphous material with superb clarity • Excellent impact strength and mechanical properties • Ideal for use in optical applications 	<ul style="list-style-type: none"> • Semi-crystalline material with good mechanical properties • Excellent chemical resistance at elevated temperatures • Excellent processibility
Material	PA (Polyamide)	PBT (Polybutylene Terephthalate)	Polysulfone
Features & Benefits	<ul style="list-style-type: none"> • Semi-crystalline polymer • Reinforced to offer better impact strength, flexibility and dimensional stability 	<ul style="list-style-type: none"> • Semi-crystalline polymer with versatility • Superior resistance against abrasion, temperature and moisture • Excellent electrical properties with superb impact strength 	<ul style="list-style-type: none"> • Temperature-resistant amorphous material • High Tg (195°C) • Excellent biocompatibility

The information presented above is of a general nature and shall not be relied upon other than for preliminary material identification purposes only. Other materials are available upon request.



Unisteel Headquarters
 Unisteel Technology Limited
 Tel : +65 6634 6366
 Email : sales@unisteeltech.com

www.unisteeltech.com

A member of **SFS**