



2 Shot Engineered Sealing Solutions



2-Shot moulding is an innovative manufacturing process used to produce complex moulded parts in multiple materials, and can be used for a variety of product designs across a wide range of industries.



Products manufactured from multiple materials with powerful molecular bond.



Replaces high volume component assemblies in one manufacturing process.



Cost reductions as high quality parts produced in a single manufacturing tool.



Complete seal design service from experienced application engineers.

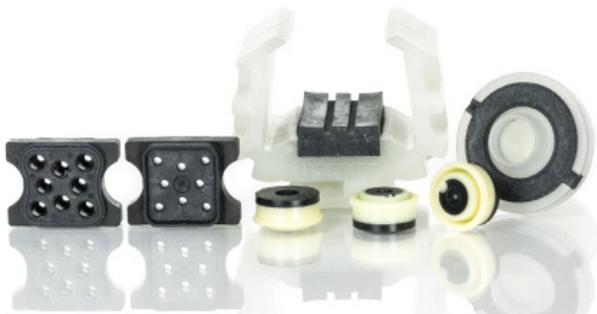
What is 2-shot Moulding?

2-Shot moulding is not considered a brand new method of manufacturing. It has been used for years to produce items that we see and use every day; toothbrushes, tools, kitchen utensils and toys are just a few examples of multi-shot moulding being used to produce relatively cheap items in large production quantities.

A 2-shot mould is designed with a top and bottom cavity. During the moulding process the first material is injected into the top cavity and the mould opens and rotates. The first material is then injected into the top cavity again, while the second material is injected into the bottom cavity simultaneously.

The mould then opens and the parts are ejected from the bottom cavity; the mould rotates again and the whole process is repeated.

Our 2-Shot Moulded Seals



Why use 2-shot Moulding?

Our 2-shot moulding process is used to produce engineered products that perform a critical sealing function. Previously, manufacturers of high volume, multiple material assemblies have produced them via chemical or mechanical bonding, adhesives or over-moulding.

These methods achieve the finished assembly required, but the processes are lengthy, and can encounter problem areas that require stringent controls.

A failure in any of these areas can result in poor quality parts, therefore making these methods unsuitable for critically engineered components.

By utilising 2-Shot moulding technology, we overcome any potential problems and produce engineered and reliable parts for sealing applications.

Material compatibility



The table below shows the compatibility between materials:

	Polypropylene PP	Polyamide (Nylon) PA	Acrylonitrile Butadiene & Styrene ABS	Acetal POM	Polyethylene Terephthalate PET	Polybutylene Terephthalate PBT	Polycarbonate PC	Styrene Acrylonitrile Copolymer SAN
Geolast TPV/Nitrile	●							
Santoprene TPV/EPDM	●	●	○				○	
Thermolast SEBS	●	●	●	●	○	○	●	○
Elastolan PU		○				○		

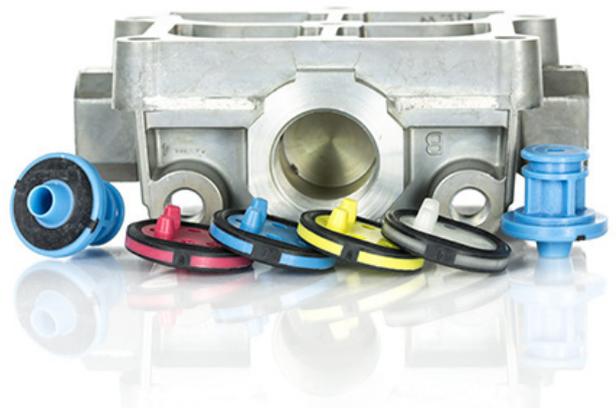
What materials are suitable?

Thermoset compounds (such as Nitriles, Fluorocarbons, EPDM's) are not suitable for the 2-Shot moulding process; instead we must use Thermoplastic Elastomers (TPE's).

TPE's are materials with elastomeric and thermoplastic properties, and are suitable for melting at high temperatures and therefore can be co-polymerised to the secondary material.

Typical examples of TPE's are; Styrene Block Copolymers (TPE-S), Thermoplastic Polyurethane Block Copolymers (TPE-U), Copolyesters (TPE-E), Copolyamides (TPE-A), Olefinic Thermoplastic rubbers (TPE-O), Vulcanised Phase blends (TPE-V) and PVC/NBR blends.

Plastic materials commonly used in the 2-Shot moulding process are Polyamide (PA/Nylon), Polybutylene Terephthalate (PBT) and Polypropylene (PP).



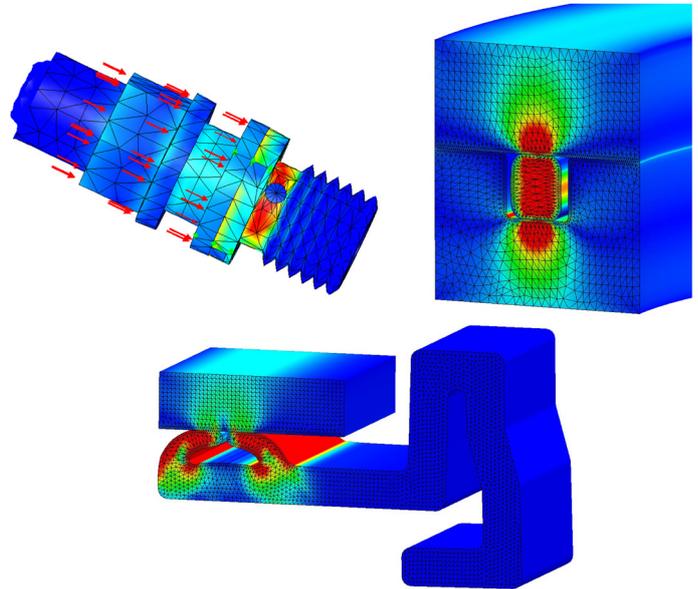
Design & Development

We provide unrivalled technical and engineering support to ensure our customers benefit from the best possible seal performance at optimum cost.

We are dedicated to providing a complete design service; from initial seal geometry and profile choice, to material selection and prototyping, through to final production.

We work closely with your engineers to provide the most effective sealing solutions for each bespoke application.

Our Application Engineers utilise years of seal design experience and materials expertise, alongside technology such as 2D/3D CAD and FEA analysis programs to simulate performance before finalising each individual seal design.

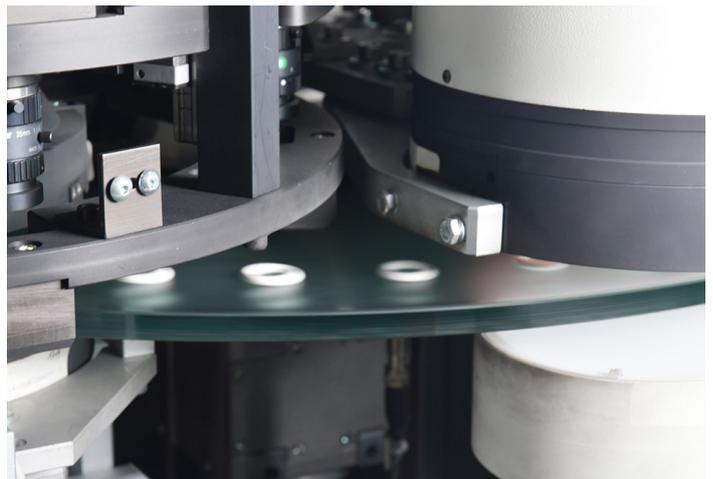


Quality Assurance

We maintain strict quality procedures at all stages of our design, development and manufacture processes. We are ISO9001:2015, ISO13485:2016 and ISO14001:2015 approved, and our manufacturing facilities approved to IATF16949:2016.

Our stringent quality principles and proactive controls mean our customers have reduced claims (and associated costs), increased change control, and prevention of productivity loss and line-stops.

With our manufacturing facilities we develop continuous improvements to processes such as follow up-audits, implementation of adequate prevention measures, analysis and review of similar products to prevent future issues, effective root cause analysis and preventative actions review.



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