

MULTI-BLOW COLD FORMED COMPONENTS

Metal forming solutions for geometrically complex shapes

Using special progressive multi-stage machines, multi-blow cold forming is the go-to process for applications requiring components with complex internal and external part geometries. This process forms intricate shapes by deforming and splitting metal into the intended shapes, without any loss in material.

From 1 die 2 blow heading machines, right through to state-of-the-art seven station parts formers, parts such as gears, shafts, studs, pins, collars, spacers and specialized fasteners can be rapidly produced through our cold forming techniques.



Features & Benefits

- Ability to create various shapes
- Parts can be formed into net or near net shapes
- Multiple material capabilities
- Consistency in quality and hold close tolerance
- Increased hardness and improved grain structure
- Material cost savings
- Better functional reliability
- Available for mass production

Material : Carbon steel, stainless steel, titanium, aluminium and brass.

Size Range : 0.3mm – 10.0mm (diameter)

Length : 1.5mm – 38.0mm

Types of Cold Forming Shapes

Upsetting	A method to form heads on fasteners, material contained in the die is forced outward by the punch to produce a large cross section than the initial blank. This technique may yield diameter increases of 2-3 times the starting diameter.
Extrusion	The extrusion process forces the material to flow in the open space between a die and a punch. There are two types – forward and backward. Both types may be deployed simultaneously in some designs. <ul style="list-style-type: none">• Forward extrusion is a method to reduce diameter. Material is forced forward by the punch through an orifice in the die, producing a smaller cross section than the initial blank.• Backward extrusion is where material is contained in the die and forced backward around the punch, producing blind holes and cups.
Flatten & Pierce	<ul style="list-style-type: none">• Flattening is an alternate form of upsetting.• Piercing is a method of providing a through hole in a work piece at much higher rates than drillings and without creating machining shavings.
Trimming	Trimming process is the shearing of excess material from the headed configuration of complex shapes so as to obtain the final design and specifications.
Ironing	Usually performed as a secondary operation, ironing reduces the outside diameter by thinning the side walls. This technique is also used to size the inside diameter and outside diameter of a part. The material that is moved goes into the overall length.
Flaring	Flaring is used to increase the outside diameter and inside diameter of the open end of a hollow cylindrical part which may result in slight thinning of the wall. Two times the starting diameter can be achieved.

Technical Support

Unisteel offers more than just manufacturing. You can count on our partnership to provide end-to-end solutions for your needs.

Fastener Selection

With our years of experience and knowledge in the field, Unisteel will be more than happy to work with customers' product development team to offer professional recommendations in selecting the right fasteners – from material selection to surface treatment- for your applications.

Performance and Application Testing

Unisteel test facilities are fully equipped with state-of-the-art apparatus to carry out performance tests and quality checks of both incoming raw materials to finished products. Tests include 3D profile analysis, surface roughness, tensile strength, torsional analysis and concentricity gauge etc.

Product Teardown

By conducting product teardowns, Unisteel is able to provide VE/VA by identifying areas for improvements relating to component design and recommending cost effective solutions to enhance the assembly and performance of your final product.



Unisteel Headquarters

Unisteel Technology Limited

Tel : +65 6634 6366

Email : sales@unisteeltech.com

www.unisteeltech.com

A member of **SFS**