Introduction of Products

Steel

Automobile parts

Front hub
Stator shaft
Companion flange
Lower control arm
Balancer shaft
Valve rocker arm

Crankshaft

Truck parts

Tie rod end
Flange
Pin bushing
Pitman arm
End rod

Construction machine parts

Coupling
Sleeve
Link
Roller

Aluminum

Automobile parts

Lower control arm

Knuckle
Upper link

Steel

Motorcycle parts

Crankshaft

Final driven flange　　Bottom bridge

General purpose engine parts

Knuckle　　Gear　　Crankshaft
Rear hub　　Housing bearing

Tough and beautiful products.

Precision technology is at the heart of every manufacturing process. These products are beautiful in appearance and tough, owing to the distinctive characteristics of forging.

Aluminum

Motorcycle parts

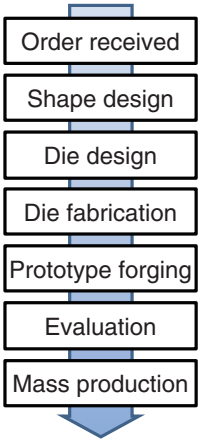
Engine bracket　　Top bridge　　Swing arm
Cushion arm for ATVs　　Hub disc　　Bottom bridge
Cushion conrod for ATVs　　Cushion arm　　Cushion conrod

Handle boss　　Rear brake　　Gearshift pedal
Kick starter arm　　Knuckle for ATVs

Product Design Technology

We provide design and production of forged products that meet our customer needs.
Our staff and equipment encompass the entire design and manufacturing process from production design based on structure analysis, die design through forging simulation, to strength testing using various types of equipment.

Flowchart from order to mass production

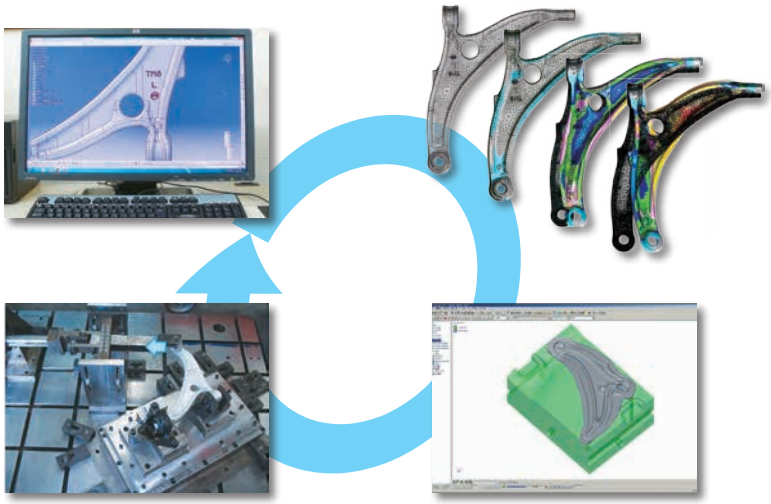


Shape design

Rapid shape design with CAD

Structural analysis

Study of mechanical product shape with structural analysis program



Strength test

Verification of suitable product strength through various tests

Forging simulation

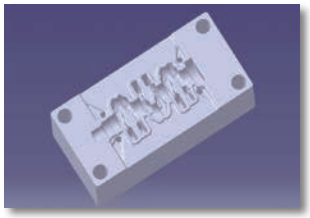
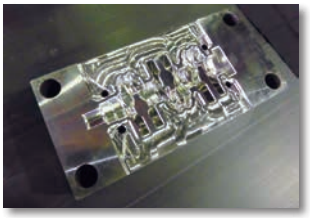
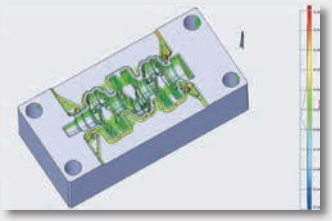
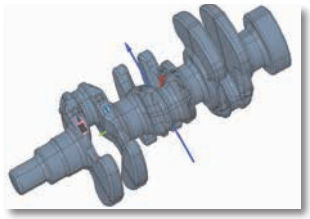
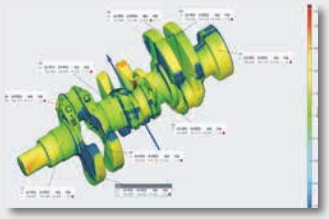
Die design through forging simulation

Aluminum automobile lower control arm development example

Die design technology

The use of 3D scanners for prototyping and mass production helps reduce cost and raise product quality by allowing more accurate product and die design and faster die manufacturing.
Comparative verification of manufactured products (A+B) to ensure that manufacturing output conforms to design values is achieved by superimposing in software the designed die model/product model (A) and the 3D scan results of the processed die/forged product (B).
The verification results are then used for the visual and quantitative evaluation of workmanship and the identification of points that require improvement, to further refine die design/fabrication and product accuracy.

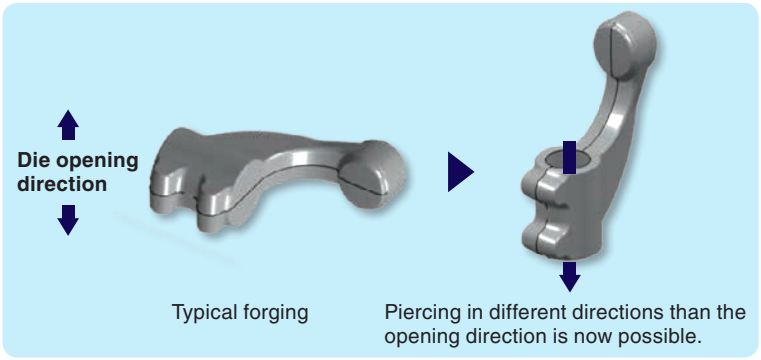
3D scanner

	Design A		**Fabrication B**		**Comparison A+B**
Die	 Die model designed by CAD	+	 Completed die	=	
Product	 Product model designed by CAD	+	 Forged product	=	 Differences between A and B shown in different colors

Technology Development

To quickly respond to the needs of industry, we constantly develop new technologies and work on new proposals.

Cross Piercing (CP) method



Typical forging

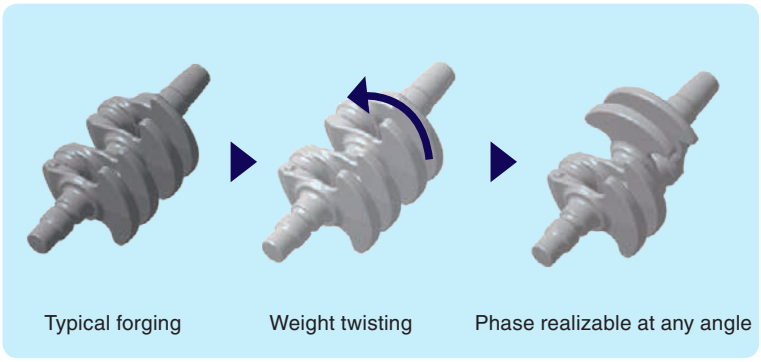
Piercing in different directions than the opening direction is now possible.

Product example

Piercing, which until now could be done only in the die opening direction, can now be done in any direction and dimension.

Machining after forging is greatly reduced.

Crank twist technology



Typical forging

Weight twisting

Phase realizable at any angle

Product example

The crankshaft phase can be realized at any angle.

This contributes to the realization of degree of freedom of product design and undercut shapes without machining.

Magnesium forging technology

Magnesium alloy

- Lightest metal for practical use
- Abundantly available
- High specific strength
- Good machinability
- Weldable
- High damping (vibration absorption) capacity
- Recyclable

Motorcycle part: Bridge

Automobile part: Lower control arm

Forging examples

Both weight reduction and strength can be achieved through the use of magnesium material.

Magnesium is being increasingly eyed as an alternative to aluminum.