

Introducing The Optimization feature

Key Feature1

Complete optimization calculations in a short time with our high-speed solver.

Key Feature2

Discover mass-producible shapes through molding constraints.

Key Feature3

Reduce weight without compromising strength.

Field of application

Lightweighting | Innovation in existing designs | Mass production parts

Improved
energy
efficiency

Reduction
of CO₂
emissions

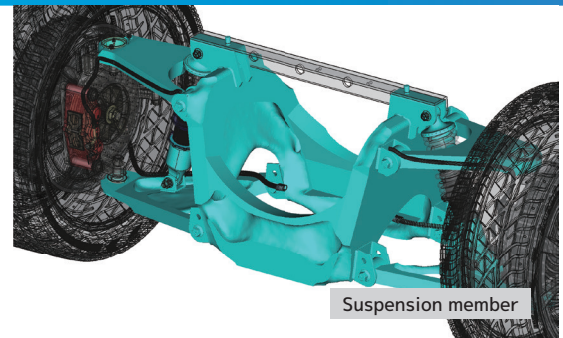
Cost
reduction

Achieve high-speed and large-scale optimization

In optimization, we perform repeated structural analysis calculations. ADVENTURECluster's high-speed solver shortens calculation times and can handle large-scale models.

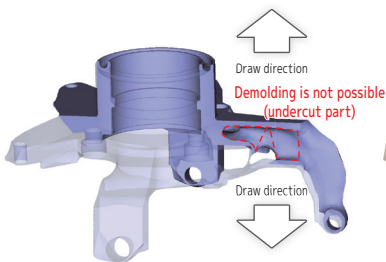
Specific calculation example

2.5 million elements, 16 parallel, 3 hours 20 minutes

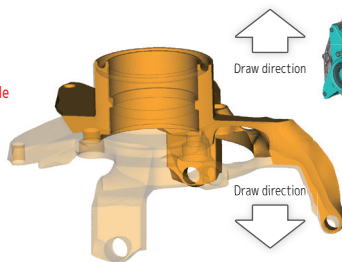


Suspension member

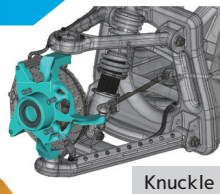
"Molding constraints" that emphasize manufacturability



Without molding constraints



With molding constraints

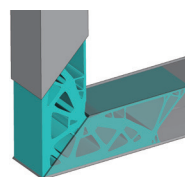


Knuckle

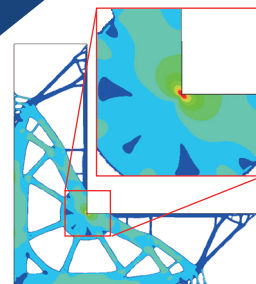
Structures derived from topology optimization often exhibit a complexity that makes them less suitable for mass production processes. ADVENTURECluster implements molding constraints to eliminate the need for time-consuming undercut processing when using plastic injection molding and die-casting. This function makes it possible to directly deploy optimization results in production technology without reworking.

"Optimization considering stress" creates a more durable structure

In topology optimization that maximizes stiffness, the structure tends to concentrate stress, making it more prone to failure. ADVENTURECluster's optimization considering stress feature makes it possible to discover the lightest shape possible that is less likely to break and avoids stress concentration.

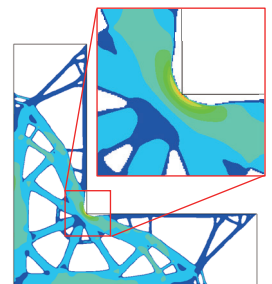


L-shaped joint



Lighter but easily broken
(Max. Mises stress 160 MPa)


Optimization without considering stress



Light and unbreakable
(Max. Mises stress 71 MPa)

Optimization with considering stress

Developer

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