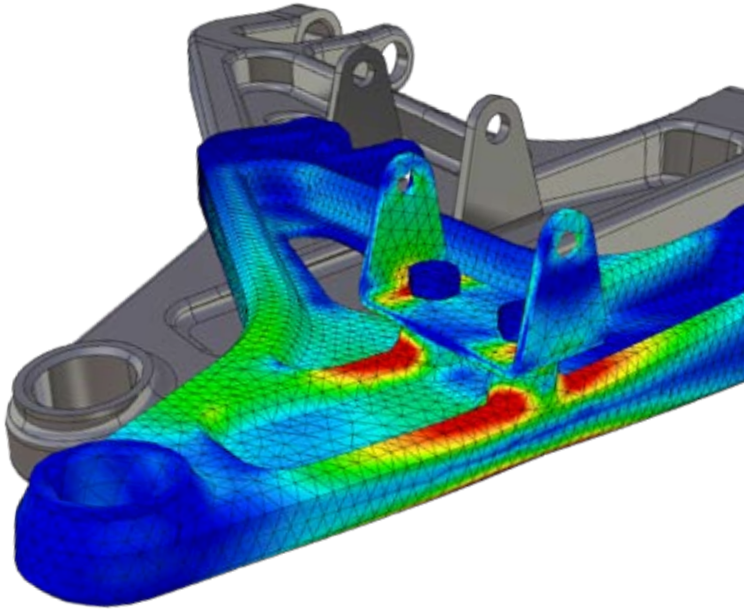


# YOUR PARTNER FOR INNOVATIVE PRECISION FORMING SOLUTIONS

**FORGINGTECH®**



- Our Expertise for your Success
- Unique Solution Provider for High-Performance Components
- Lighter Stronger and Higher Performance Components

...

**KINGTIME  
TECH  
SOLUTIONS**

**KINGTIME GROUP  
PRODUCTION**

 **KINGTIME**  
Exceptional Engineering

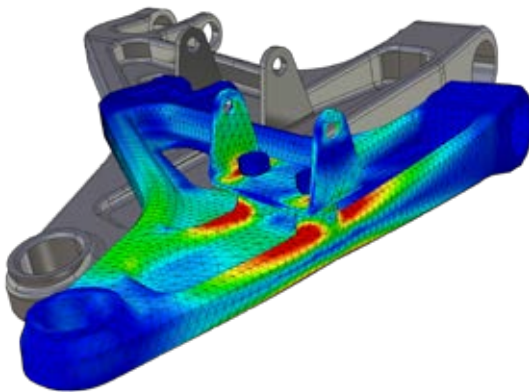
# KINGTIME TECH SOLUTIONS

In contrast to conventional engineering service providers --- focuses on cost-efficient design appropriate to the production process and materials. In the later project phases, Kingtime Tech Solutions can also offer support in the form of material and failure analyses, for instance during part tests as well as during ramp-up and serial production.

## Precision Forging



## CAE Simulation & Verification

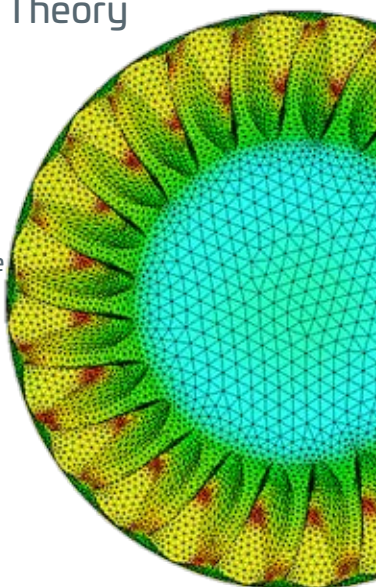


# FORMING THE FUTURE

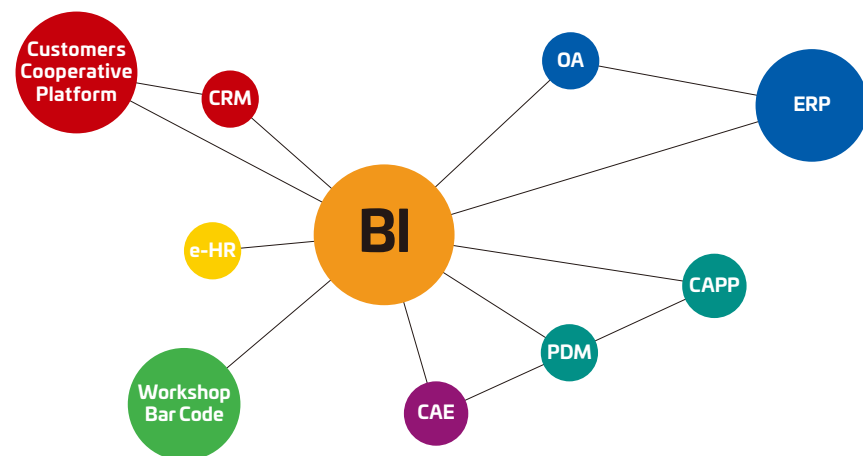
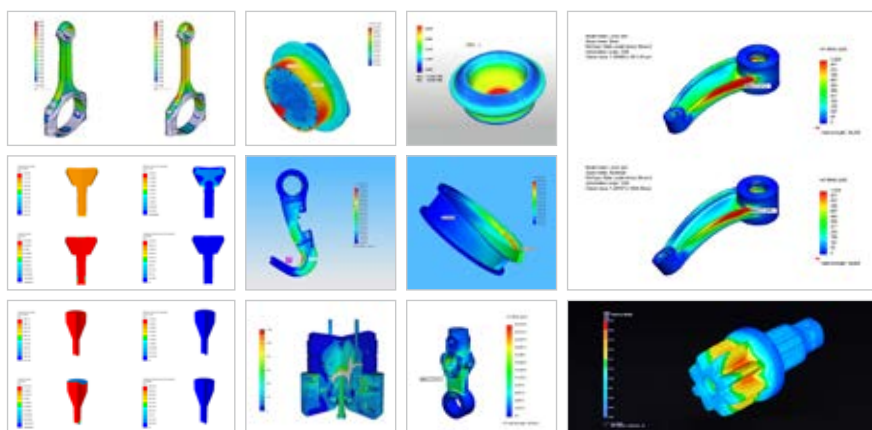
## THE ART OF PRECISION FORGING

Combined Experience In Practice & Theory

- Enhanced Raw Material Tested
- Forging Simulation & Verification
- Perfect Inner Metal Flow Line
- Stabilized Inner Metal Structure
- In-depth Know-how from 30 Years Forging Practice
- Passion About Precision & Innovation
- 50 Production Lines
- 90,000,000 Units Per Year



**We supply the knowhow  
You provide the excellent parts**



**Information System Excellence**

# KNOW HOW

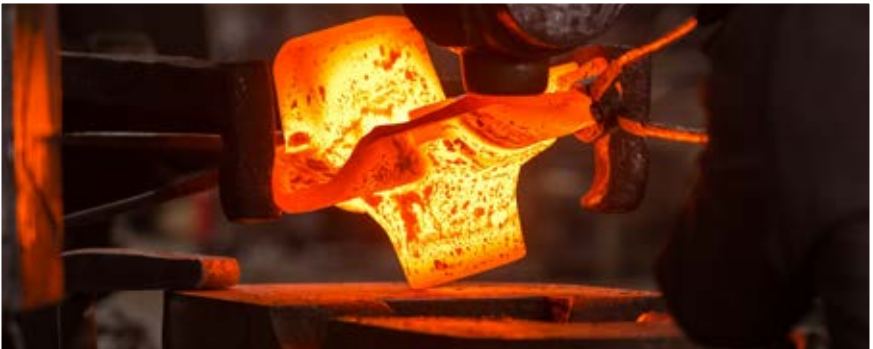
The unique clustering of know-how makes Kingtime Tech Solutions into a development partner with a clear unique selling point for forging components as well.

## Our Expertise for Your Success

Quality from the sum of experience

We offer you a unique package comprising

- Part development
- Lightweight design expertise
- Broad material and process know-how
- Failure analysis
- Longstanding experience in large series production
- Engineering know-how and methods



## We Sourcing Your Competitiveness



Strong  
R&D



Supreme Quality  
Offering



Bigger Batch  
Production



Professional Team  
Long-term Experience



Professional  
Manufacturer



Great  
Reputation

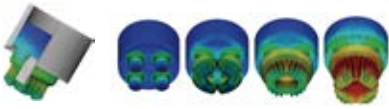


Social  
Responsibility

# PART DEVELOPMENT

## CAE Simulation

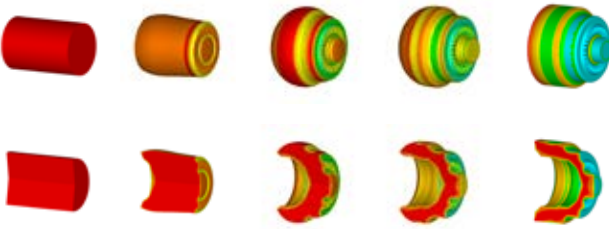
Our superior CAE techniques provide a strong theoretical basis for the optimization of forging parts and dies.



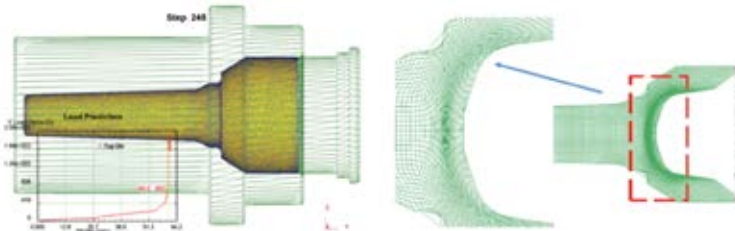
Profile Extrusion



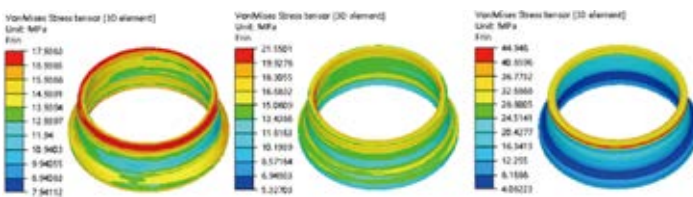
Warm Forging



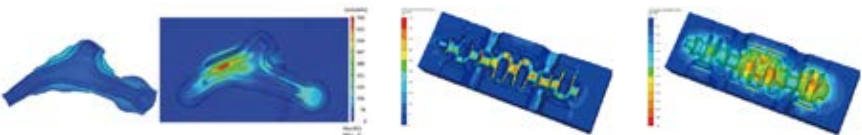
Combination of Hot and Cold Forging



Metal Flow Lines



Work Residual Stress



Mold Analysis



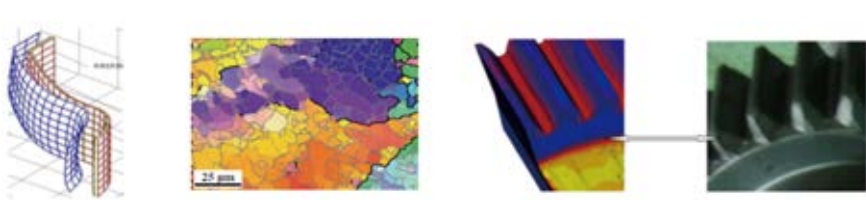
Mold damage and life cycle estimation



## In-Depth Studies



Multi-scale simulations for microstructure evolution of discontinuous forging



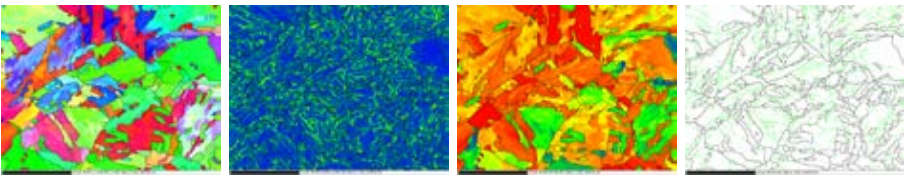
Springback analysis and compensation method for gear precision forging considering the evolution of microstructure

## Materials/Failure Analysis

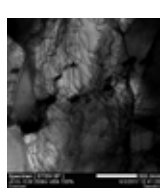
With a wide variety of analytical techniques including electron microscopy and metalloscopy, we are well-equipped to carry out your failure issues or material challenges.



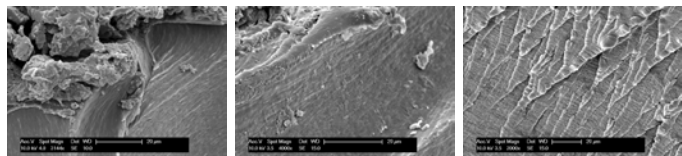
Grain size evolution during forging



Grain orientation, geometrically necessary dislocation, Schmidt factor, High and low angle boundaries



Dislocation density evolution on the thermomechanical response of metals



Microscopic morphology of tensile fracture

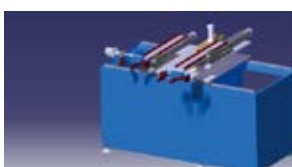
## Additive Manufacturing



Additive manufacturing enables a fast, flexible and cost-efficient production of parts directly from 3D CAD data, we help you to perform your tasks in an innovative way.

## Automation Equipment Development and Integration

Principle Engineering: precision forming automation solutions, equipment development, system integration services, software development, machine vision and artificial intelligence algorithm development.



Automated forging manipulator development.



Aeroengine casting intelligent grinding and polishing system integration.

# APPLICATION

We are an innovation partner and solution provider in many application areas, stretching far beyond forging technologies for the automotive industry. Take advantage of our technical know-how for your individual solutions. Combine our areas of expertise as you need them.



Automotive



Aerospace



Railways



Agricultural Engineering



Industrial



Construction Engineering



Military



Special Driveline Technology



Wind Power

**KINGTIME GROUP  
P R O D U C T I O N**



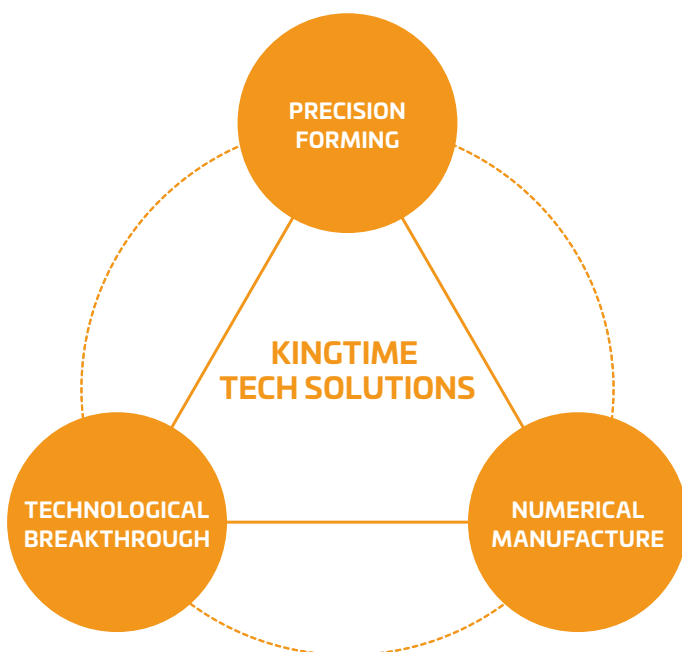
**SINOLIGHT**  
Create Infinite Value



**HANTECH**  
AEROSPACE



**SINO  
STEEL**



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**Web: [www.kt-f.cn](http://www.kt-f.cn)**

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