

## AFFORDABLE ALL-IN-ONE 3D CAD/CAE/CAM



### Overview

ZW3D is an easy-to-learn, all-in-one 3D CAD/CAE/CAM solution that can take you through the entire product development journey from conception to production. It helps you build better products faster at less cost by integrating solid-surface hybrid modeling, structural simulation, 2-5 axis machining and specialized tools for sheet metal, molds and more.

### ZW3D's Unique Values

#### 1 Truly All-in-One 3D CAD/CAM Solution

ZW3D can complete CAD/CAE/CAM tasks previously done in stand-alone CAD, CAE and CAM programs. The integrated system makes it easier to manage and exchange 3D data.

#### 2 Unique Solid-Surface Hybrid Modeling

Unique Solid-Surface Hybrid Modeling technology can unleash your 3D design ideas by breaking down the boundaries between solid and surface features. It provides designers with more creativity and opportunities.

#### 3 Cutting-Edge Non-Solid Mold Parting Technology

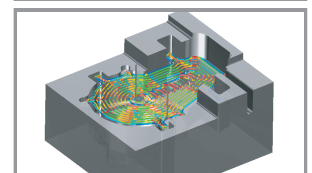
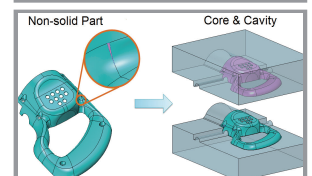
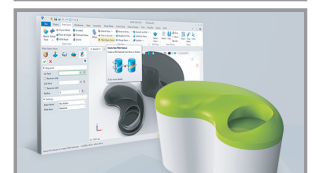
You can design molds based on non-perfect solid features and create core and cavity faster than ever. Skipping the model healing will shorten the entire process of mold production from cost evaluation to manufacturing.

#### 4 Smart QuickMill Technology

Patented QuickMill Technology helps generate roughing toolpaths with uniform cutting loads. It automatically adjusts feed rate using the Advanced Feed Rate Control function to lengthen tool life, reduce tool costs and raise machining efficiency.

#### 5 Easy to Learn & Use

ZW3D ensures fast software implementation and shortens the learning curve with clear and intuitive UI, Show-n-Tell™, tutorial videos, knowledge base and a professional support team.



## How ZW3D Can Help You

### Intuitive 3D Visualization & Parametric Design

Proven capabilities of 3D visualization and parameterization for concept, product, and mold design.

- Speed up product development, seizing marketing opportunities efficiently.

### Unified 3D Data in One Integrated System

All-in-one solution with integrated CAD, Mold and CAM modules.

- Simplify workflows by unifying all 3D data in a single system.
- Prevent data loss during transitions and streamlines coordination among departments.

### Flexible and Robust Modeling Capabilities

Flexible modeling technologies based on ZW3D's Overdrive kernel - unique Solid-Surface Hybrid Modeling, morphing, wrapping and embossing.

- Optimize product R&D workflow and design efficiency.
- Enable creative and personalized product designs to customers.

### Powerful Industry Design Tools

A wide range of design tools tailored for sheet metal, structure, piping, harnesses, molds and more.

- Assist designers and engineers in tackling various design tasks efficiently.

### Effortless CAM Workflow

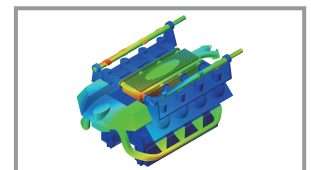
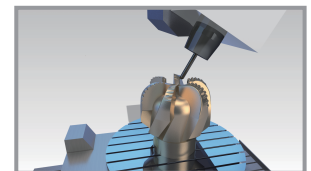
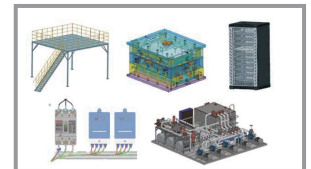
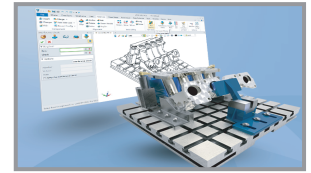
Intuitive UI, automatic feature identification, tactic machining capability, Quick-Mill technology, and high-performance roughing strategy VoluMill™.

- Accelerate the production cycle and save tool costs.

### ZW3D Simulation - A Finite Element Structural Analysis Tool

Powerful simulation solution integrated in ZW3D for structural static, modal, dynamic and thermal analysis to verify product's structural performance and design rationality.

- Streamline design, simulation, and manufacturing.
- Eliminate data interaction barriers, shortens product development cycle, and boosts design efficiency.



## Customers Who Trust Us

SONY



BAOWU



MATSUYA  
KNIT TO THE FUTURE



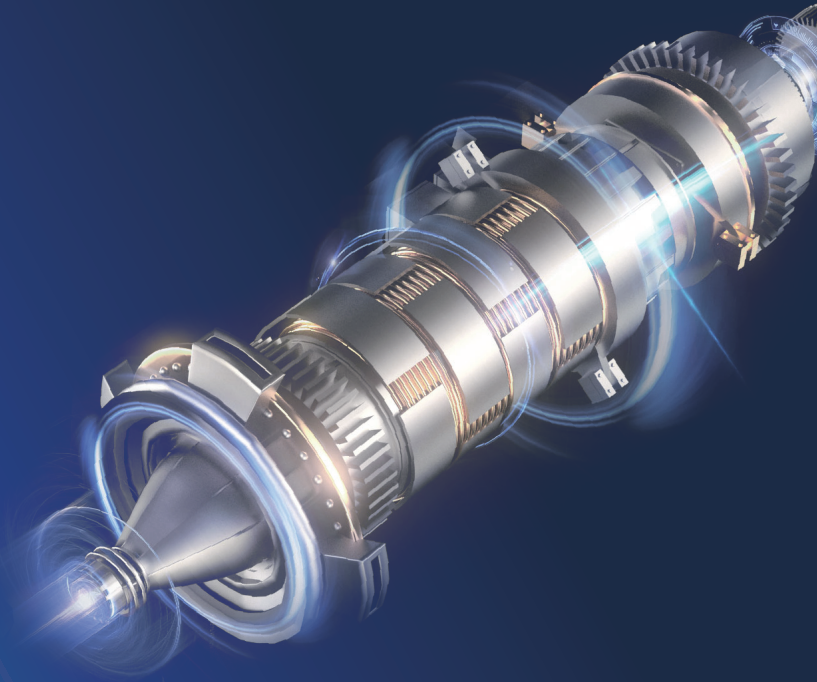
### ZWSOFT Headquarters

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### About ZWSOFT

ZWSOFT has been delivering reliable all-in-one CAx solutions since 1998, trusted by over 1,400,000 designers, architects, and engineers in more than 90 countries worldwide.

## ZW3D CAD MODULE



### Overview

The ZW3D CAD solution possesses strong capabilities of product design with unique Solid-Surface Hybrid Modeling, multi-object file management, powerful data exchange and reliable product verification tools. Further to this, the solution features sheet metal and reverse engineering. Benefiting from the shortened learning curve and the flexible design module of ZW3D, you can speed up the product design process and boost design productivity.

### Top 5 Reasons to Choose ZW3D CAD

#### 1 Excellent Data Translator

Eliminate the barriers between different 3D modeling systems and maximize data reuse. There is no need to worry about CAD data exchange with your suppliers.

#### 2 Easy to Learn & Use, 3D Visualization & Parameterization

The intuitive UI, clear 3D design workflow and the built-in Show-n-Tell™ tutorials help you shorten your learning curve and reduce training costs. Plus, product design can be directly visualized in 3D with full parameterization.

#### 3 Flexible & User-Friendly Modeling Tool

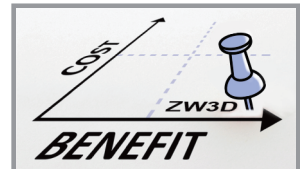
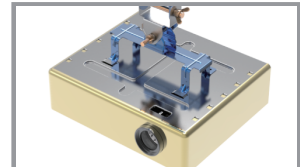
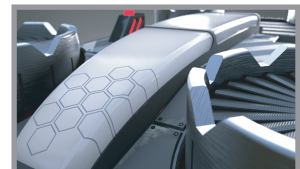
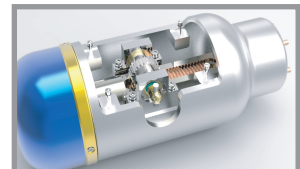
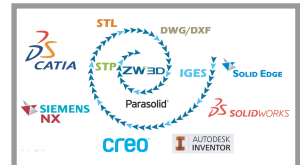
Thanks to the unique Solid-Surface Hybrid Modeling, ZW3D can help speed up modeling process and increase design flexibility with creative and personalized product designs delivered.

#### 4 Versatile 3D CAD Platform

Various CAD functions, like 3D modeling, assembly, 3D annotations, 2D drawing, sheet metal, reverse engineering and more, are provided in ZW3D, making it possible to meet the needs of different departments in your company.

#### 5 Effective Yet Budget-Friendly 3D CAD Software

With a powerful file translator, an intuitive UI, minimized re-learning costs, and strong design & manufacturing capabilities, ZW3D provides an effective yet budget-friendly CAD/CAM solution.



## Highlights of ZW3D CAD

### Efficient File Management

- Streamline data management to store all project objects, like part, assembly, 2D sheet and CAM plan of an entire project in one file.
- Easily create and manage object files in the single root object mode, integrating seamlessly with PDM/PLM systems.

### Improved Collaboration

- Read mainstream 3D CAD file formats directly, including Z3, CATPart, prt, asm, sldprt, par, ipt, sat, dwg, dxf, iges, step, x\_t, 3dxml, cgr, and obj., along with 2D sheet formats like CATDrawing and slddrw.
- Export models to multiple formats such as Z3, STEP, IGES, STL, 3D PDF, and CATPart.

### Powerful Part and Assembly Design

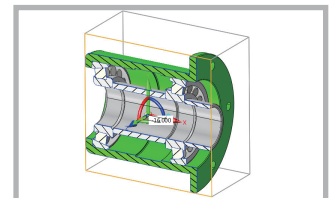
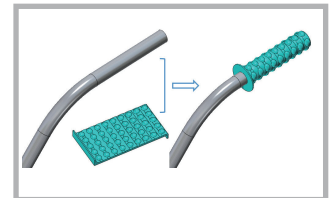
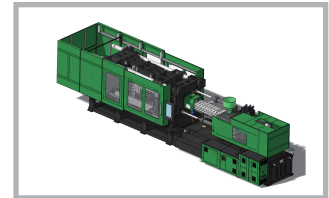
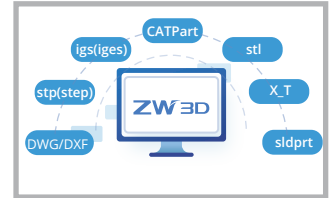
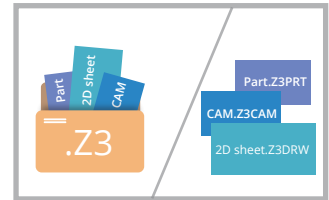
- Accelerate complex product design with powerful solid, surface, and assembly tools, supporting both parametric and synchronous modeling techniques.
- Tackle various design tasks with a wide range of tools for sheet metal, structure, piping, harnesses, motion simulation, structural simulation, and more.
- Quickly generate 2D sheets of different standards with views, dimensions and BOM tables.

### Flexible Embossing, Morphing & Wrapping

- Efficiently emboss high-precision surfaces from raster images.
- Perform flexible morphing and wrapping with solids, surfaces, and STL data.
- Unleash creativity with flexible design options.

### Comprehensive Product Verification Tools

- Utilize visual analysis tools like contour stripe, gaussian curvature, draft angle and thickness analysis for surface quality and product structure checks.
- Verify assembly fit with dynamic section views and interference checks.
- Generate vivid animations for effective product demonstrations.



## ZW3D CAD Features

• Translator for CATPart, prt, asm, sldprt, par, ipt, sat, dwg, dxf, iges, step, x_t, 3dxml, x cgm, obj and more
• 2D Sketching with Ready-sketch Library
• 3D Wire Frame Tools & 3D Sketch
• Parametric Modeling & Direct Edit
• Solid-Surface Hybrid Modeling
• Shape Morphing, Wrapping & Flex Tools
• Assembly Design, Interference Check & Animation
• Geometry Healing
• Sheet Metal Design, Structure Design, Piping Design and Harness Design
• Reverse Engineering
• 2D Views, BOM/Hole Tables
• PMI (Product Manufacturing Information)
• Library Design

## Customer's Voice



"ZW3D makes your imagination touchable, merges your ideas with hybrid technology and exposes the forms you want to create."

– Rui Ferreira Job, CAD Department  
Director at Moldegama

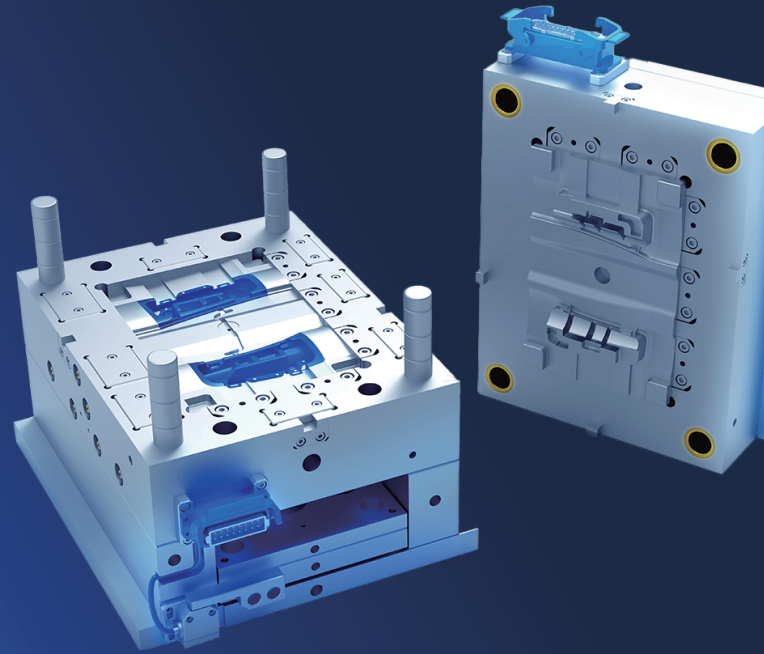
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## ZW3D MOLD MODULE



### Overview

The ZW3D Mold design solution covers your needs throughout the whole process of mold design, providing high-quality data import, smart model healing, unique non-solid mold parting, extendable mold base and standard parts, and practical electrode design & 2D document. It helps you accelerate the cost evaluation and maximize your productivity by shortening mold design process.

### Top 5 Reasons to Choose ZW3D Mold

#### 1 Whole-Process 3D Mold Design

Efficiency is improved through a streamlined workflow. In a single system, users can complete all mold design work with 3D visual and parametric design, reducing costs and facilitating collaboration.

#### 2 Powerful Design Verification Tools

Various product verification tools and healing features help mold makers analyze, check and heal, to eliminate design errors and ensure the manufacturability of product structure.

#### 3 Excellent Time Saver for Quotation

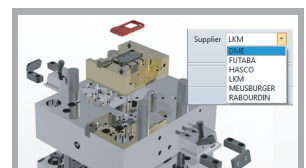
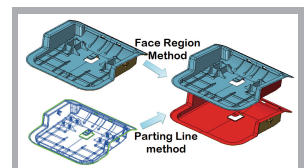
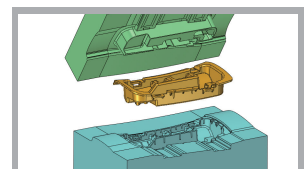
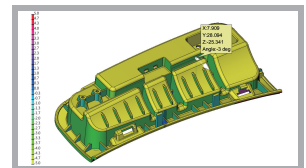
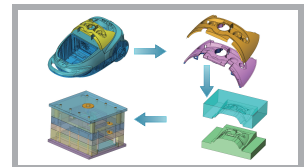
ZW3D's non-solid mold parting without healing makes itself stand out from the competition, which greatly shortens the time of cost evaluation and quotation and speeds up the cycle of mold design.

#### 4 Faster Core & Cavity Splitting

Quick splitting of complex parts with parting lines or the core-cavity region definition method helps users improve efficiency, reduce delivering time and win more business opportunities.

#### 5 Extendable MoldBase & Standard Parts

Work with an extensive library of mold bases and standard parts that can be modified and personalized to meet requirements of different countries and companies.



## Highlights of ZW3D Mold

### 1. Mold Preparation

- Directly read standard formats and 3D models from CATPart, prt, asm, sldprt, par, ipt, sat, dwg, dxf, iges, step and more.
- Draft analysis tool helps check undercuts and vertical walls with rainbow color effect.
- Thickness analysis verifies the manufacturability of product structure.

### 2. Flexible and Fast Parting

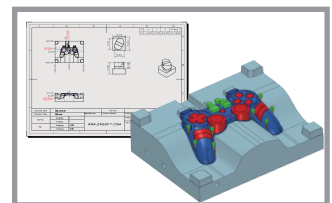
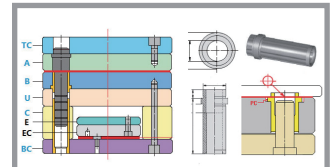
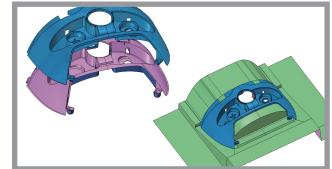
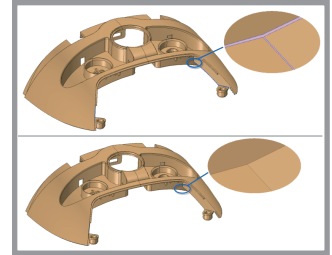
- Solid model is not a requirement for splitting. Open geometry can be directly split without healing to shorten the quotation period.
- Split quickly with two flexible methods: parting lines and face region definition.
- Various tools help users quickly generate parting lines & faces to increase efficiency.

### 3. MoldBase & Standard Parts

- Easily load an entire mold base from many major suppliers: DME™, Hasco™, LKM™, Futaba™, Meusburger™ and more.
- Numerous standard parts are provided and trimming is performed automatically.
- Customizable mold bases and standard parts can satisfy different requirements.

### 4. Electrode Design & 2D Document

- Easy-to-use electrode extract tools allow you to deal with complex electrodes quickly.
- Automatically create a batch of electrodes and 2D sheets to shorten development time and reduce errors.
- Customizable CAM templates help you machine electrodes efficiently and get good G code in a few clicks.



## ZW3D MOLD Features

• Built-in CAD Features
• Mold Design Wizard
• Parting Lines & Faces, Core-Cavity Splitting
• MoldBase & Standard Parts Library
• Cooling, Runner, Gate, Slider
• Electrode Design

## Customer's Voice



"We believe that ZW3D can cover our whole production process, including mold design, production, molding, fuel injection, assembly, and IML of parts."

– Nobutoki  
General Manager at Able Techfeatures

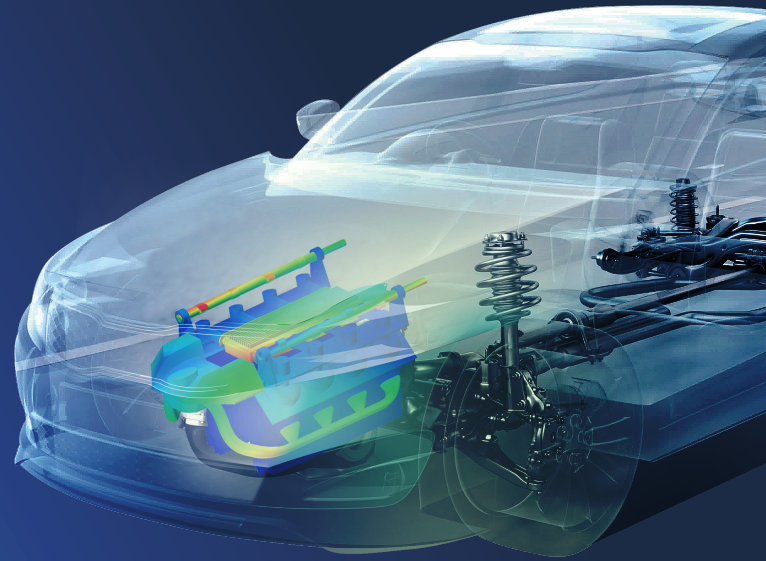
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# ZW3D SIMULATION MODULE



## Overview

ZW3D Simulation, a finite element structural analysis module integrated in ZW3D platform for structural static, modal, dynamic and thermal analysis and as a powerful tool for engineers to analyze the structural performance of the product and verify its design rationality. Combined with ZW3D, it provides an integrated development environment for design, simulation and manufacturing, which eliminates the barrier of data interactions, shortens the product development cycle and boosts the efficiency of product design.

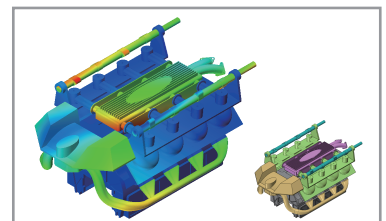
## Structural Simulation Analysis

Provide linear and nonlinear statics, buckling, modal, linear and nonlinear structural dynamics analysis, as well as frequency response and response spectrum analysis, for the analysis of product stress, displacement and strain under external load, mainly used to test product strength, stiffness and stability.

- Support simulation of structural response to static loads
- Support analysis of vibration characteristics of structures to avoid resonance
- Support simulation of structural response to impact loads

Support 14 analysis types:

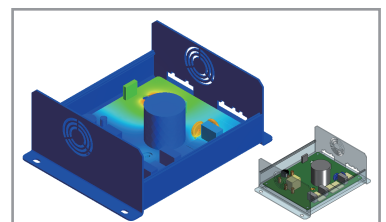
1. Linear Static	8. Linear Transient (Modal)
2. Nonlinear Static	9. Nonlinear Transient
3. Linear Buckling	10. Harmonic Response (Modal)
4. Linear Modal	11. Response Spectrum
5. Steady-State Heat Transfer	12. Fatigue
6. Transient Heat Transfer	13. Random Vibration
7. Linear Transient (Direct)	14. Drop Test



## Heat Transfer Analysis

Provide steady-state and transient thermal analysis, accurate simulation of heat conduction, heat convection and heat radiation in engineering, so that the structural design of products meets the requirements of thermal reliability.

- Support simulation of stable or time-varying thermal loads on products
- Support analyzing the thermal stress results of the structure after completing the thermal analysis
- Ensure thermal reliability of products and shorten product development cycle



## Key Highlights and Features

### 1 Clear Analysis Process Navigation Tree

Clear and concise process navigation tree, from top to bottom operation, easy to learn and use.

- Process navigation tree is logical, which reduces learning costs
- Highly coordinated with ribbon bar, flexible and convenient operation

### 2 Powerful Mesh Capabilities

Provide a variety of mesh types and local mesh control functions, and can perform high quality finite element mesh division for product models.

- Support 1D, 2D and 3D mesh
- Local mesh controlled by edge, face and solid to improve the accuracy of analysis
- Support compatible mesh generation of common nodes, and mesh generation of multi-entity models

### 3 Intelligent and Quick Pre-processing Check

Before simulation calculation, one-key intelligent check function is provided for pre-processing settings, including material parameters, unit attributes, boundary definition, grid checks and more, to check project errors in advance and improve analysis efficiency.

### 4 Accurate Simulation Analysis Results

The finite element method is adopted to support multiple matrix solving techniques, non-linear iterative algorithms and transient dynamics solving methods. The simulation results are consistent with the international benchmark NAFEMS.

- Matrix solving techniques: (1) Direct and iterative methods for large-scale linear equations; (2) Lanczos method for eigenvalue problems.
- Non-linear iterative algorithms: Full Newton-Raphson method and improved Newton-Raphson method, automatic time increment step technique.
- Linear dynamics solution: Direct integration and modal superposition.

### 5 Rich Display of Post-processing Results

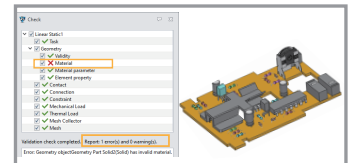
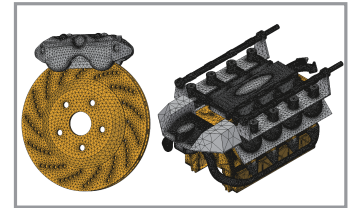
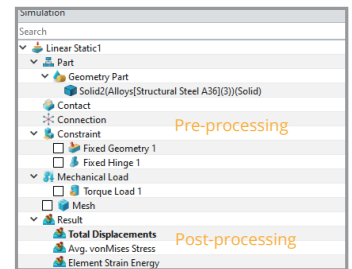
The diversified presentation of post-processing results provides engineers with intuitive analysis of results, helping them to evaluate and optimize designs more effectively.

- Support cloud image and partial display function, allowing you to view the simulation results directly
- Support animation and detection functions to view deformation trend and maximum/minimum values
- Support Word or PDF format to save analysis reports

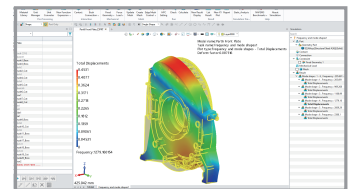
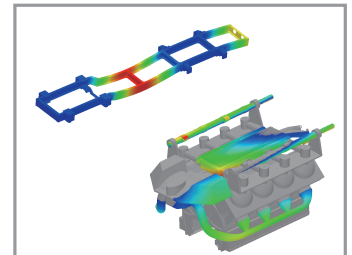
### 6 CAD/CAE Integrated Solution

Product modeling and simulation analysis in the same environment can greatly reduce the workload of model processing and data transformation, and facilitate engineers to quickly design products that meet the actual needs.

- Parametric modeling, rapid construction of geometric models
- Seamless integration of CAD and CAE data, greatly improving design efficiency
- Lower learning cost, easier for engineers to master



Theoretical value (MPa)	ZWSim(MPa)	The cloud picture of the stress along the y-axis at point D	
5.38	5.37		
Frequency	Theoretical data (Hz)	ZWSim (Hz)	Modal shape
1	45.897	44.437	
2&3	109.44	106.678	
4	167.89	165.971	



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# ZW3D CAM MODULE

## Overview

ZW3D CAM is a comprehensive CNC machining solution, offering 2-5X milling, turning, high-speed machining and drilling strategies. Powered by the unique QuickMill technology, with automatic feature/region identification and a flexible toolpath editor, it allows engineers to generate highly reliable and easy-to-program toolpaths efficiently.

## Top 5 Reasons to Choose ZW3D CAM

### 1 Easy to Learn & Use

ZW3D provides an intuitive and customizable interface to optimize your workflow. Whether you are an experienced engineer or a complete novice, ZW3D CAM can be mastered with a pretty short learning curve.

### 2 A Reliable CAM Suite

Lots of options in ZW3D, like accurate calculation of minimum tool overhang length, safe ramp, gouge detection and collision check between holders and parts, the table and clamps, ensure feasible and reliable machining environment.

### 3 Powerful Built-in CAD Capability

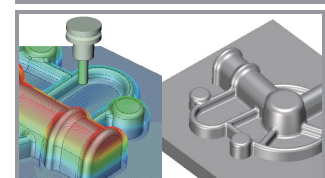
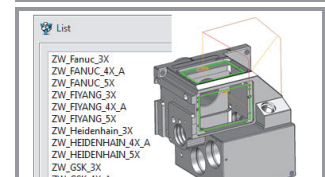
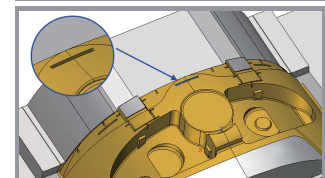
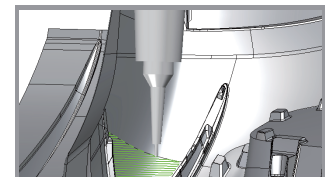
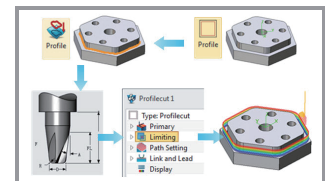
The built-in translator can read mainstream file formats in the industry. Plus, toolpaths in ZW3D CAM module can be synchronized with any modifications of model geometry in the integrated 3D CAD module.

### 4 A Versatile CAM Platform Suite

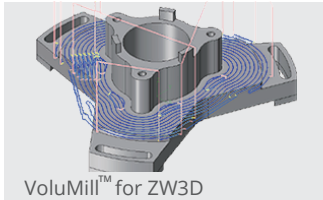
ZW3D empowers designers to deal with various types of machining, including 2-5X Milling, High Speed Machining, Turning and Drilling. A rich library of customizable post-processors are also provided to drive your machines.

### 5 Efficient and High-quality Machining

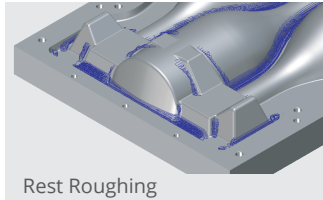
The unique QuickMill technology and VoluMill™ for ZW3D automatically determine the uniform cutting loads and feed rates, increasing productivity by up to 200%. Finishing operations can be performed well to get high-quality surfaces.



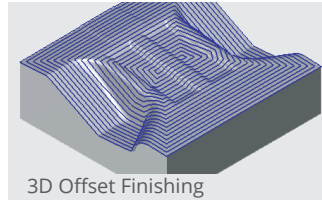
## Highlights of ZW3D CAM



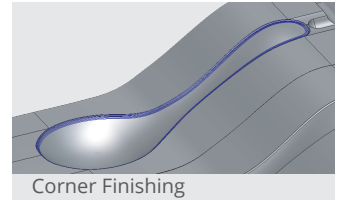
VoluMill™ for ZW3D



Rest Roughing



3D Offset Finishing



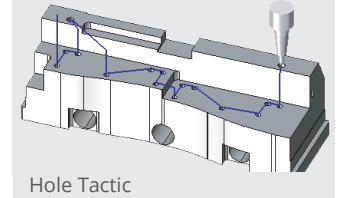
Corner Finishing

### 1. 2-3X High-Performance Roughing & High-Quality Finishing

- More than 40 types of 2X and 3X machining strategies make users deal with all kinds of work easily.

### 2. Intelligent Machining Feature Recognition

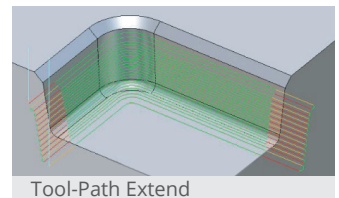
- Hole Tactic automatically recognizes features and generates manufacturable toolpaths, reducing programming time by 70%.
- With the Reference Tool or Reference Operation, ZW3D can identify previously-machined areas automatically and create toolpaths correspondingly.



Hole Tactic

### 3. Flexible & Efficient Toolpath Editor

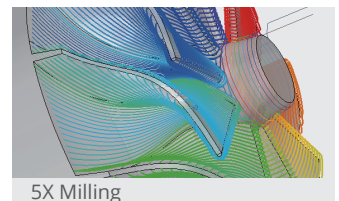
- Edit entire or partial toolpaths with tools like Trim, Re-order, Re-link, and Extend & Transform, making programming process more flexible and efficient.



Tool-Path Extend

### 4. Turning & 5X Milling

- Turning provides internal and external Roughing, Finishing, Grooving, Threading, Facing and Drilling to deal with most types of turned parts.
- 5X Milling provides a complete solution for multi-axis machining. Multi-sided work piece can be machined in one set-up to achieve highly accurate cutting with greatly reduced machining time.



5X Milling

### 5. Verification & Simulation

- The Quick Verify and Solid Verify tools can verify the toolpaths and analyze the excess materials to avoid gouges and collisions, delivering more reliable machining.

## Customer's Voice

"One, we are a small company with limited resources, so our choice has to be budget-friendly. Two, ZW3D doesn't skimp on performance – it has all the tools we need. And finally, ZWSOFT is very supportive of what we plan to do."

–Russel Pescod  
Partner of ULPower Aero Engines



### ZWSOFT Headquarters

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### About ZWSOFT

ZWSOFT has been delivering reliable all-in-one CAx solutions since 1998, trusted by over 1,400,000 designers, architects, and engineers in more than 90 countries worldwide.