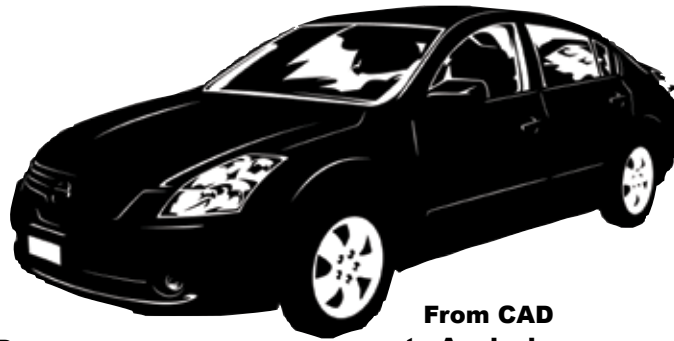


FloEFD for the Automotive Industry

MECHANICAL ANALYSIS
Engineering Fluid Dynamics

FloEFD (Engineering Fluid Dynamics) is a different breed of Computational Fluid Dynamics (CFD) software that enables mechanical engineers to simulate fluid flow and heat transfer using 3D CAD models directly, with no need for data translations or copies.



**From CAD
to Analysis
Effortlessly**

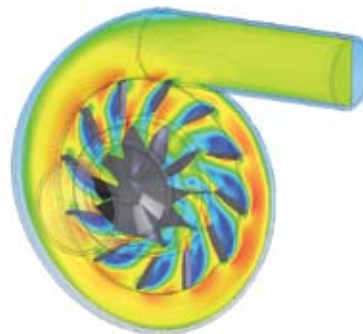
FloEFD can help you optimize:

- Flow, pressure drop and heat transfer in fuel injectors, radiators, catalytic converters, exhaust and emission control systems, manifolds, valves, nozzles, pumps and all kinds of hydraulic systems
- Under-hood airflow and thermal management
- Passenger comfort and environmental control systems
- Coolant flow in water jackets, engine blocks and cylinder heads
- Cooling of electronic systems, braking systems, powertrain components, headlamps etc.
- Performance of heat exchangers and heat sinks
- Flow and pressure drop through filters
- Fuel cell performance
- Aerodynamics of whole vehicles or components such as wing mirrors, windscreen wipers, spoilers, etc.

Unlike other CFD tools, FloEFD was developed by engineers for engineers so it works the way you do. Combined with your preferred CAD software, FloEFD puts a powerful simulation tool on your desk. Now you can create a new concept design with CAD and use the same geometry immediately to:

- Understand and improve product performance and reliability
- Test it without building a physical prototype
- Fix problems... before they become problems

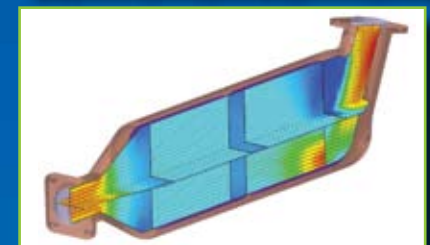
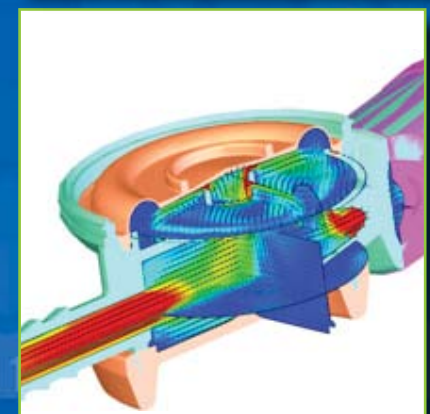
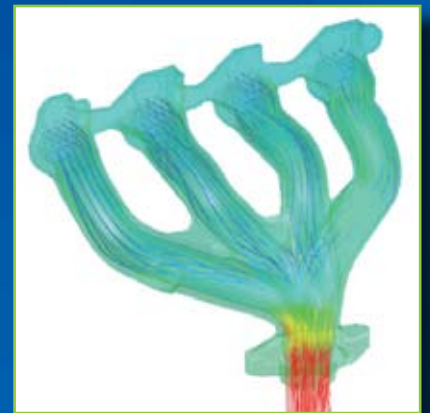
FloEFD enables you to understand and solve fluid flow and heat transfer problems in a wide range of automotive systems quicker and easier than before.



Customer Testimonial

"Testing, which used to take 2 weeks, now takes only one day; therefore, our design test schedule has shortened dramatically."

R. Aarntzen,
R&D/Engineering Manager



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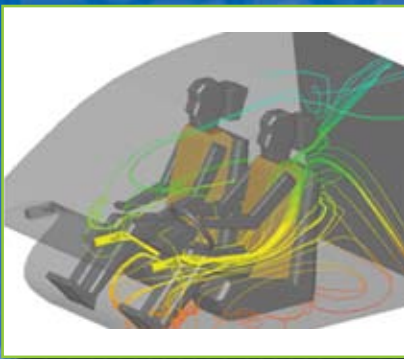
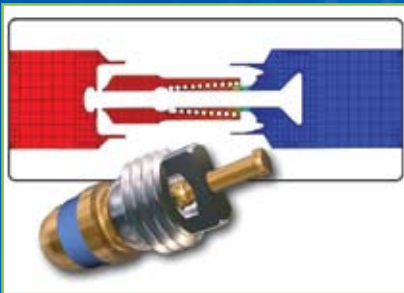
Please visit our website at:
www.mentor.com/mechanical

**Mentor
Graphics**

Customer Testimonial

" By using CFD software that is embedded into our CAD software we could evaluate the performance of each new design almost as fast as we could conceive it. We reduced the number of prototypes by about 50 which saved a considerable amount of money but most importantly let us bring the product to market faster. "

D. Gaisbacher, Project Manager,
VENTREX Automotive GmbH



" FloEFD was instrumental in helping me better understand the cumulative effects of my changes and solving the problem. "

E. Van Wolfswinkel, Engineer,
CEEMO Engineering

"What-if?" Testing Made Easy

One of the most powerful features of FloEFD is the ease with which you can conduct "what-if?" analyses. FloEFD makes it simple to clone/modify your models and analyze design variations.

The process is very simple. Create your base model and analyze it. Then create multiple variations of your design by modifying the solid model without having to reapply boundary conditions, material properties etc. When the analysis is complete, FloEFD makes it easy to compare the results among the many options to choose your best possible design.

When you are satisfied with your design, publish your report at a touch of a button. You can even publish a fully interactive 3D dynamic plot and share it with colleagues or customers.

In short, FloEFD solves your design problems and reduces your prototyping costs without requiring you to become an analysis specialist.

Automotive Manufacturers Around The World Depend On Mentor Graphics' Mechanical Analysis Division For Design Optimization

Behr Thermotronik GmbH
Continental Teves AG
DAF Trucks
Daimler AG
Delphi Automotive Systems
Denso
Eaton Corp
FTE Automotive GmbH
Fuji Heavy Industries
Haldex Brake Products GmbH
Hengst GmbH
Hitachi Corp
Honda
Hutchinson

Mann & Hummel
Metzeler Automotive Profile Systems
Miniature Precision
Mitsubishi Electric Corp
Rausch & Pausch Elektrotechnische Spezialfabrik
Roth Technik
Sanken Sangyo Co
Schefenacker Vision System
Toyota Auto Body Co.
Toyota Motor Corporation
TRW
VENTREX Automotive GmbH

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