

# PowerFLOW

## APPLICATIONS-VEHICLE DESIGN

Fluid flow simulation for *competitive design*

### Automotive Apps. & *PowerFLOW*

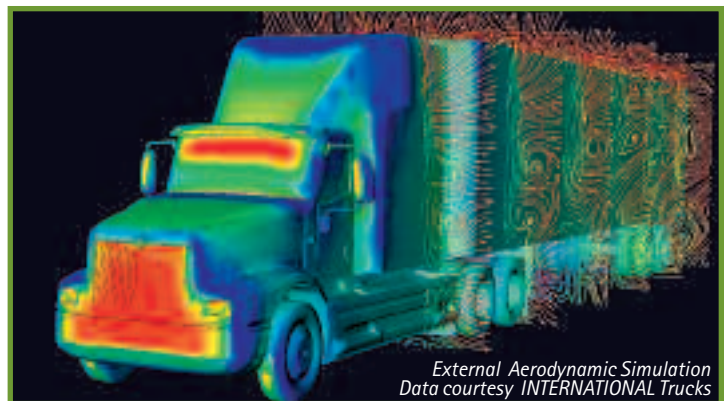
Nine of the top ten global automobile manufacturers are already using Exa PowerFLOW CFD software to analyze critical aerodynamic flow patterns. Due to its superior handling of complex geometries, Exa PowerFLOW can simulate airflow in HVAC ducts, underhood studies, sunroofs and more...its applications just keep growing.

#### Making a Design Impact Throughout the Vehicle

Compressing time-to-market and reducing development costs while increasing market share is the key to success for today's leading automotive and heavy equipment industry leaders. Suppliers and OEMs are integrating Exa PowerFLOW software as part of their product design process for entire vehicle design – from external aerodynamic simulations of concept and production vehicles to fluid dynamic analysis of powertrain, climate control and other components.

#### One Product : Multiple Applications

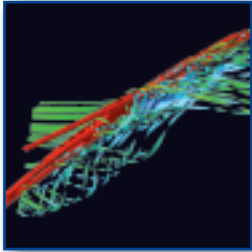
Using Exa PowerFLOW, it is now possible to make design modifications based on accurate data of CFD simulations on everything from intake ports and HVAC ducting to aeroacoustic noise sourcing and sunroof prototypes. With one powerful tool, focused design engineering teams at automotive plants can collaborate to build tomorrow's automobiles with a significant impact on areas such as warranty cost reduction, increased fuel economy and performance and styling enhancements.



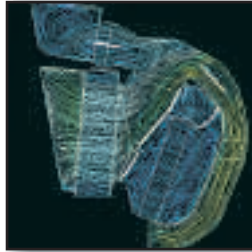
## Breadth of Applications

With such broad capabilities and proven success, the return on investment for Exa PowerFLOW can take only weeks. PowerFLOW reduces case setup time to a fraction of competitive methods, making even the most difficult simulations manageable and saving engineers days of work. See for yourself how this one software code can tackle so many complex internal and external flow simulations.

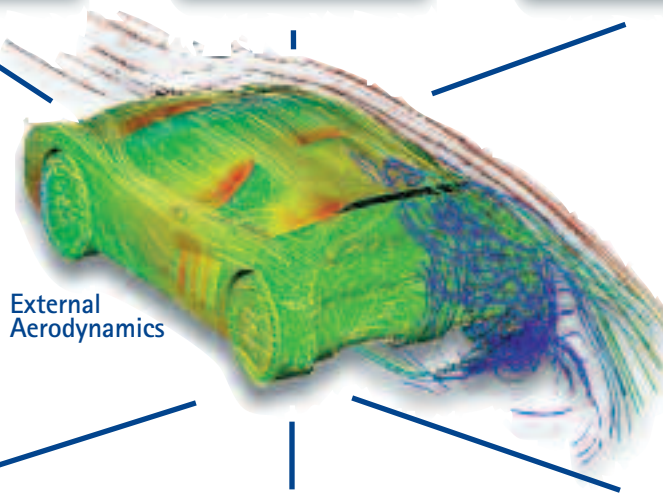
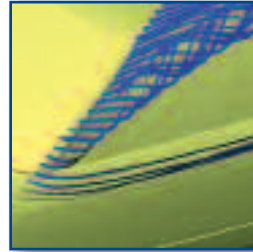
Wiper Assemblies



HVAC/Climate Control

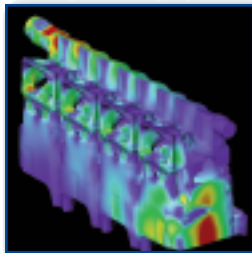


Aeroacoustics

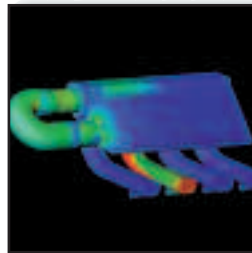


External Aerodynamics

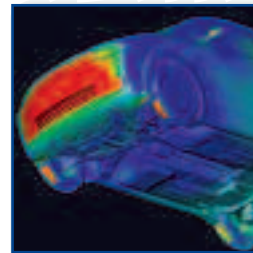
Engine Cooling



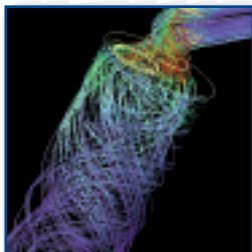
Intake Manifolds



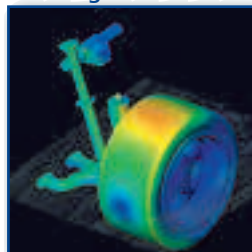
Complex Underbody



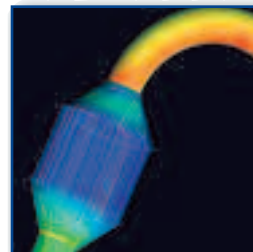
Intake Ports



Suspension/Brakes Rotating Wheels



Exhaust Manifolds



## Worldwide Headquarters

Exa Corporation  
3 Burlington Woods Dr  
Burlington, MA 01803 USA  
TEL 1/781-676-8500  
FAX 1/781-676-8599  
www.exa.com  
email: info@exa.com

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