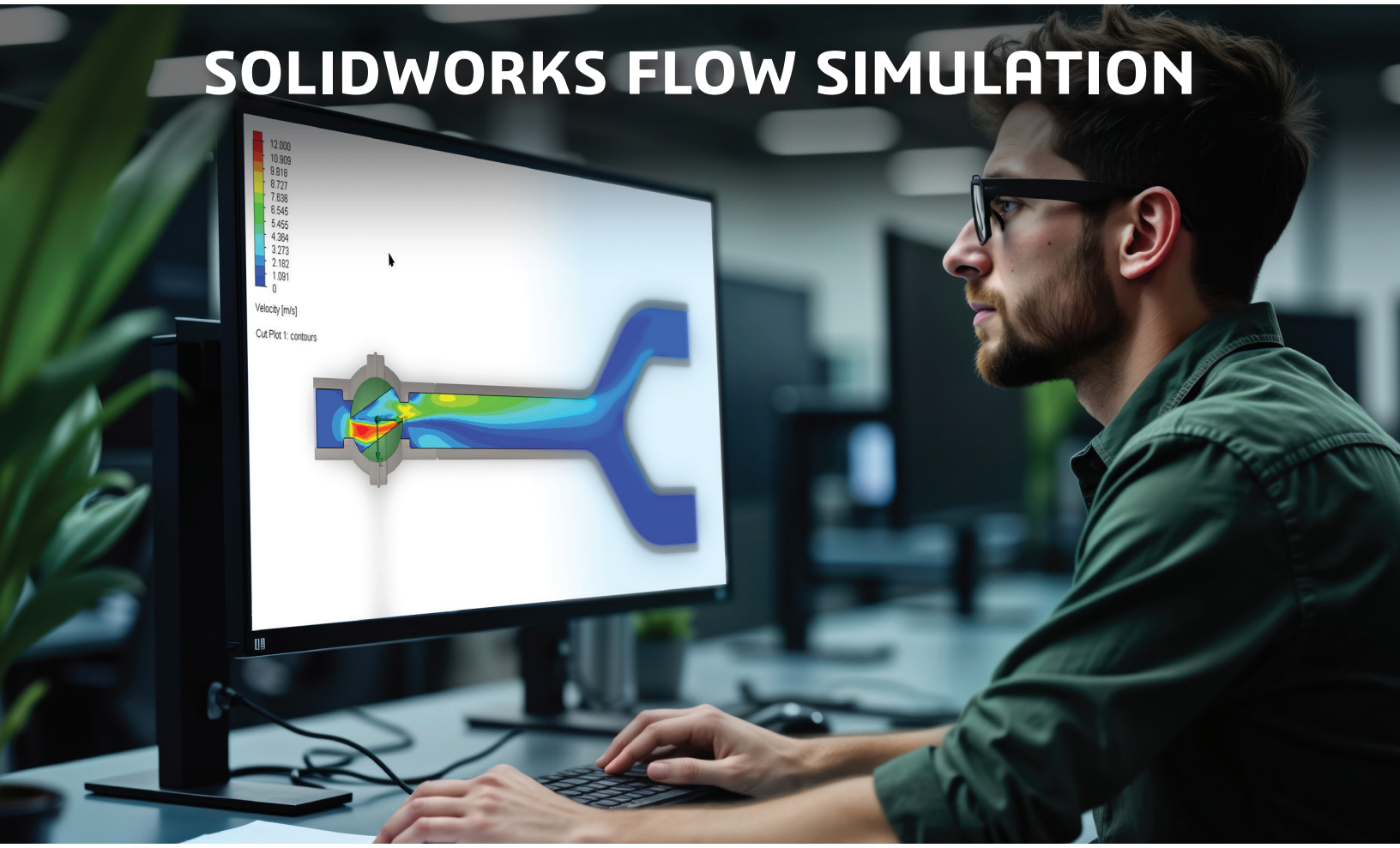
SOLIDWORKS

3DEXPERIENCE®

SOLIDWORKS FLOW SIMULATION



QUICKLY AND EASY SIMULATE FLUID FLOW, HEAT TRANSFER, AND FLUID FORCES IMPACTING YOUR DESIGNS.

SOLIDWORKS® Flow Simulation is a powerful computational fluid dynamics (CFD) solution fully embedded within SOLIDWORKS. It can simulate the effect of forces such as fluid flow, heat transfer, and fluids on your designs.

OVERVIEW

SOLIDWORKS Flow Simulation enables designers to simulate liquid and gas flow in real-world conditions, run what-if scenarios, and analyze the effects of fluid flow, heat transfer, and related forces on or through components.

SOLIDWORKS Flow Simulation offers two flow modules that encompass industry specific tools, practices, and simulation methodologies: a heating, ventilation, and air conditioning (HVAC) module and an electronic cooling module. These modules are add-ons to a SOLIDWORKS Flow Simulation license.

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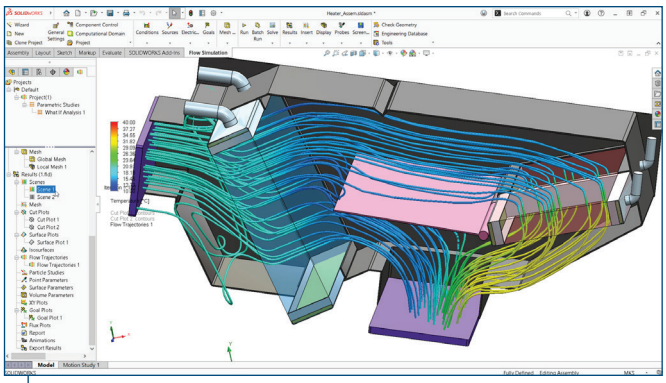
KEY CAPABILITIES



Understand how heat travels through your system before you build a single prototype.

Time- and money-saving: accelerate and improve your design process

- Rapidly evaluate product performance across multiple design variables.
- Accelerate time to market by optimizing designs and reducing physical prototypes.
- Improve cost control and proposal accuracy through reduced rework and higher quality.
- Use the Electronics Cooling Module with dedicated thermal management simulation tools for accurate PCB, enclosure, and product thermal analysis.

Integrated: Simulate fluid flow and heat transfer directly within the design workflow

- Analyze low-speed to supersonic flows, thermal effects, fans, and rotating components as part of your design workflow.

Flexible: Choose from a wide range of capabilities

- Design and optimize HVAC systems, ducts, airflow, and thermal comfort.
- Simulate products in realistic operating environments and medical applications.
- Improve electronic cooling, LED performance, and overheating prevention.
- Optimize fan placement, airflow distribution, and system noise prediction.

Adaptable: Apply the simulation you need

- Run 2D and 3D simulations of internal and external fluid flows.
- Reduce complexity with symmetry and sector periodicity capabilities.
- Simulate steady-state and transient fluid flows.
- Use liquids and gases, and non-Newtonian, mixed, compressible, and incompressible flows.
- Work with subsonic, transonic, and supersonic flow regimes.

Feature-rich: Find all the features you need for your project

- Work with advanced fluid physics, including porous media; non-Newtonian; compressible, real gas; laminar; and turbulent flows.
- Simulate convection, boundary layers, moving/rotating parts, and gravitational effects.
- Handle heat transfer and conduction in fluids, solids, and porous media with conjugate heat transfer support.
- Apply automatic and manual global mesh settings with local mesh refinement.

Supported: Access help, documentation, and sharing tools

- Access integrated help documentation, a knowledge base, and an engineering database, and share results via eDrawings®.

Advanced options: Run complex applications easily and quickly

- Predict noise, cavitation, condensation, humidity, tracer studies, and two-phase flows.
- Run advanced thermal physics including radiation, Joule heating, Peltier effects, heat pipes, and thermal joints.
- Simulate electronics cooling with PCBs, thermoelectric coolers, and two-resistor components.
- Use the HVAC module to analyze radiation, cooling, lighting, and contaminant dispersion.
- Create complex designs with free surface analysis, periodic boundary conditions, and comfort parameter evaluation.

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With Dassault Systèmes' **3D**EXPERIENCE platform, 370,000 customers of all sizes, in all industries, can collaborate, imagine and create sustainable innovations that drive meaningful impact.

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Virtual Worlds for Real Life

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