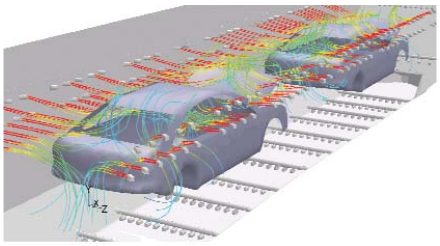
Simulation Solutions for the Industrial Equipment Industry

INDUSTRIAL EQUIPMENT

No matter the product or application, the engineering demands on industrial equipment design are similar. Companies strive to make their designs more robust by taking into account the relevant physics, complete systems and external environment. The industry requires solutions that reduce their time-to-market and allow for sharing knowledge and solutions among customers and vendors.

CASE-IN-POINT

As one of the world's leading suppliers of production systems for the automotive industry, Dürr Systems GmbH, headquartered in Stuttgart, Germany, employs ANSYS software as its major meshing tool. The company is thus able to quickly generate various high-quality mesh types over complicated 3-D geometry. With ANSYS, Dürr has reduced the time required for CFD simulations by more than 27 percent.



ANSYS solutions offer the ability to handle very large models through advanced meshing and solver technologies.

CASE-IN-POINT

In order to improve the load capacity-tare weight ratio of cranes without lowering safety levels, engineers at Liebherr-Werk Ehingen GmbH in Germany must determine exactly how stress is distributed. For many years now, Liebherr has found ANSYS to be a valuable tool for designing lightweight constructions with high load-bearing capacities.

ANSYS provides solutions to:

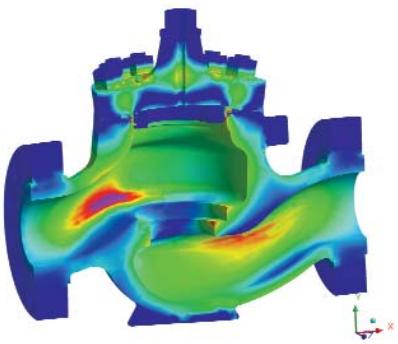
- Design and analyze complete systems and large assemblies for vibration, stress and thermal conditions
- Perform real-world virtual prototyping in the design stage through interaction between various complex physics
- Analyze complex flows and external/internal aerodynamics in industrial equipment
- Improve efficiency, performance and longevity of industrial equipment using robust design tools for simulation-driven design
- Meet customer, industry and government regulation standards through increased safety, reduced emissions, less noise and better design and operation

ANSYS Simulation Solutions

- ANSYS® CFX®
- ANSYS® Multiphysics™
- ANSYS® Mechanical™
- ANSYS® ICEM CFD™
- ANSYS® DesignModeler™
- ANSYS® DesignXplorer™
- ANSYS® BladeModeler™
- ANSYS® TurboGrid™

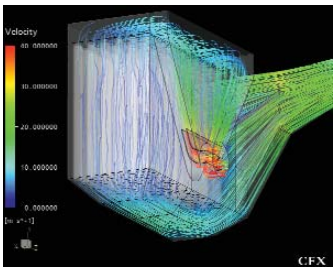
"One of the most important aspects of crane construction is safety, thus steel constructions must be 100 percent reliable. This can be achieved only by using a highly dependable program such as ANSYS."

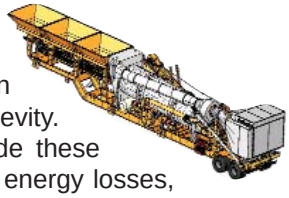
– **Dr. Norbert Stanger**
Head, Crane Design Department
Liebherr-Werk Ehingen GmbH



Hiter develops control valves for the international equipment market. The bolts pre-tension implementation into ANSYS® Workbench™ reduces Hiter engineers' work time, increasing the number of simulations it is possible to generate.

CASE-IN-POINT



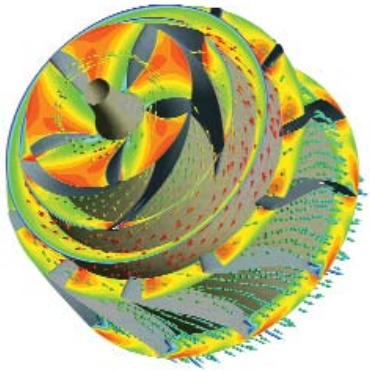


The asphalt industry in Brazil is under pressure from environmental regulations to offer products that have lower energy consumption and more compact dimensions. Ciber Equipamentos Rodoviarios Ltda. chose ANSYS CFX software to assist in analyzing many of the complex processes involved in asphalt production. These include combustion, solids drying, liquid and solid mixture, solid-air separation and filtration, and pneumatic transport of particles. By performing computational fluid dynamics analysis, Ciber was able to simulate how changes in the design of dust collection components would affect performance and longevity. The computer simulation predictions of flow inside these components are improving performance, reducing energy losses, reducing dimensions, and providing better understanding of some critical erosion points.

The ANSYS Advantage

ANSYS is trusted and used by leading companies for manufacturing farm equipment, washing machines and refrigerators, industrial power generation equipment and construction equipment among others. ANSYS solutions offer customers a competitive advantage through:

- ANSYS Multiphysics, an advanced, proven coupled physics technology for true virtual prototyping
- ANSYS ICEM CFD, an industry standard in meshing for CFD and structural analysis that offers robust meshing tools for large and complex models
- ANSYS CFX, a world leader in computational fluid dynamics for rotating machinery design and chemical processing
- ANSYS Workbench, which provides a unified product development environment offering integration across a wide range of design processes — ranging from geometry modeling and editing, meshing and pre-processing, advanced analysis (structural, thermal, electro-magnetics, CFD, etc.) and robust design optimization



ANSYS simulation software has assisted companies around the world in designing better pumps even to demanding specifications.

About ANSYS, Inc. Solutions

ANSYS designs, develops, markets and globally supports engineering simulation solutions used to predict how product designs will behave in manufacturing and real-world environments. Its integrated, modular and extensible set of solutions addresses the needs of organizations in a wide range of industries. ANSYS solutions qualify risk, enabling organizations to know if their designs are acceptable or unacceptable — not just that they will function as designed. ANSYS helps organizations achieve:

- Innovative and high-quality products and processes
- Fewer physical prototypes and test setups
- Faster return on investment due to reduced development time
- A more flexible and responsive information-based development process, enabling the modification of designs at later stages of development
- A front-end simulation strategy that offers a superior method for bringing products to market in less time and with fewer costs

About ANSYS, Inc.

ANSYS, Inc., founded in 1970, develops and globally markets engineering simulation software and technologies widely used by engineers and designers across a broad spectrum of industries. The Company focuses on the development of open and flexible solutions that enable users to analyze designs directly on the desktop, providing a common platform for fast, efficient and cost-conscious product development, from design concept to final-stage testing and validation. Headquartered in Canonsburg, Pennsylvania, U.S.A., with more than 25 strategic sales locations throughout the world, ANSYS, Inc. and its subsidiaries employ approximately 600 people and distribute ANSYS products through a network of channel partners in over 40 countries.

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