TriboForm® offers high-impact software solutions for the simulation of tribology, friction, and lubrication in metal forming processes. Easy to use, fast, and accurate, the software empowers our customers to quickly understand, simulate, and solve tribology-related problems in the metal forming industry.

By contributing to faster, more efficient, and high-quality product development and manufacturing, we deliver tangible added value in the entire process from concept to engineering and mass production. We help our customers and supply chain partners to significantly reduce costs, improve product quality, and shorten time-to-market.

Check out our customer cases at www.triboform.com and find out how leading automotive OEMs and supply chain partners in the metal forming industry are benefiting from the TriboForm® software.

Experts in Virtual Tribology

TriboForm® Engineering offers software solutions for virtual tribology. The TriboForm® software is a breakthrough innovation for the simulation of tribology, friction, and lubrication in metal forming processes.

TriboForm® was founded in 2012 as a University of Twente spin-off. The company is strongly rooted in the scientific environment and strives for ongoing high-value innovation and development of its software products.

TriboForm® builds industrial partnerships with a strong focus on customer needs and best-in-class technical support.

Founders: Dr. Ir. J. Hol and Dr. Ir. J.H. Wiebenga

About TriboForm®
All about Virtual Tribology

Tribology in metal forming processes

- Tribology is the science and technology of friction, lubrication, and wear.
- Tribology is crucial for the development and optimization of metal forming processes.
- It helps in predicting process outcomes, reducing costs, and improving product quality.

What is Virtual Tribology?

Virtual Tribology refers to the simulation of friction, lubrication, and wear. It is a software solution that enables engineers to virtually test and optimize metal forming processes. This simulation technology allows for the evaluation of tribological interactions, such as friction and lubrication, under various process conditions.

Integration in metal forming simulations

- Virtual Tribology integrates seamlessly with commercial FEM simulation packages such as LS-Dyna, PamStamp, and AutoForm.
- It allows for the simulation of friction and lubrication conditions, providing insights into process performance and material behavior.

How it works

1. Simulate friction and lubrication conditions accurately:
   - Directly integrate the results in metal forming simulations.
2. Enhance simulation accuracy:
   - Accurately account for tribology in metal forming simulations.
3. Increase reliability of simulation results:
   - Achieve more realistic forming simulations.
4. Improve the quality of metal formed products:
   - Strongly influence the stability and efficiency of production processes.

Your benefits

1. Unmatched accuracy:
   - Achieve advanced simulation functionalities in metal forming simulations.
2. Realistic forming simulations:
   - Simulate critical quality factors, reducing costs and increasing production efficiency.
3. Minimize the total cost of ownership:
   - Achieve significant cost savings in material, labor, and energy.
4. Improve final product quality:
   - Minimize defects, ensuring high-quality metal forming outcomes.

Key software features

- Accurate friction and lubrication data in metal forming simulations.
- Efficient analysis of friction and lubrication conditions.
- Easy integration with commercial FEM simulation packages.
- Improved simulation performance and efficiency.

Visit our website for technical user cases, business cases and a software trial.

TriboForm® software solutions are available on a selection of platforms, which can be customized to meet your exact needs. Licensing alternatives range from software subscriptions to annual or lifetime licenses. Check out www.triboform.com for an overview of the software solutions available for your particular needs.

TriboForm’s software solutions are available in various subscription packages, including AutoForm, PamStamp, and LS-Dyna. These brand names are the property of their respective owners.
All about Virtual Tribology

What is Virtual Tribology?
Virtual Tribology is the simulation technology for friction, lubrication and wear. TriboForm® is a software solution for the simulation of friction and lubrication in metal forming processes. This is the only friction simulation technology based on advanced physically-based simulation methods that enables directly integrating tribological results into metal forming simulations.

Integration in metal forming simulations
Although friction is a vital parameter, it is currently not considered in metal forming processes. The present industrial standard is to use a constant (Coulomb) coefficient of friction in metal forming simulations.

TriboForm® is a software solution for the simulation of friction and lubrication in metal forming processes. This is the only friction simulation technology based on advanced physically-based simulation methods. TriboForm® enables directly integrating tribological results into metal forming simulations.

How it works

• Define friction and lubrication conditions for a wide range of process settings (pressure, velocity, temperature and strain).
• Efficiently analyze friction and lubrication conditions.
• Simulate friction and account for the actual sheet material, tooling material, friction conditions, surface characteristics and lubrication conditions.

Your benefits

Unmatched Accuracy
Accurate friction and lubrication data in metal forming simulations

Easy Integration
Effortless one-step integration into FEM software packages

High Impact
Achieve the perfect final quality of your metal forming products

TriboForm® Analyse®

The TriboForm® software suite enables seamless integration of friction and lubrication simulation in the most commonly used sheet metal forming simulation packages, including AutoForm, Pam-Stamp, LS-Dyna.

TriboForm Library®

The TriboForm Library® is a database of materials and friction models derived from extensive experimental research. The TriboForm Library® is a location dependent and time-continuous database that can be linked into FEM software packages.

TriboForm FEM Plug-In®

The TriboForm FEM Plug-In® enables friction and lubrication simulation directly in commercial FEM simulation packages. This enables advanced friction and lubrication simulation in FEM software packages.

TriboForm Analyzer®

The TriboForm Analyzer® is a standalone software solution enabling users to efficiently simulate, visualize and evaluate tribology, friction and lubrication conditions.

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KEY SOFTWARE FEATURES

• Advanced friction and lubrication simulation for technical user cases and operational workflow.
• Includes a broad range of friction industry standard databases.
• Designed to be easily integrated into any existing software system without any switching costs.

Designed and manufactured in Germany.
All about Virtual Tribology

What is Virtual Tribology?

Virtual Tribology is the simulation technology for friction, lubrication and wear. TriboForm® is a software solution for the simulation of friction and lubrication in metal forming processes. This friction technology revolutionizes simulation technology by helping users to accurately simulate friction and lubrication conditions in a matter of minutes and for the first time, in every stage from concept to engineering or perform a detailed tribological analysis in try-out scenarios.

Integration in metal forming simulations

Although friction is a very important factor, it is currently not considered in metal forming simulations. As a result, material test results are not very useful, as they are often based on assumptions related to the test environment. This limits the exact simulation accuracy. The TriboForm® software enables one-step integration of TriboForm® in FEM software packages, including AutoForm, PamStamp, LS-Dyna, and continuously updated tribology and friction industry standard database.

Step adding value throughout the development process

Easy Integration

Build on the VDA 230-213 compliant TriboForm® Library® and continuously updated standard tribology and friction database, and export results into commercial FEM simulation packages. This enables advanced friction and lubrication simulation in the most commonly used FEM software packages, including AutoForm, PamStamp, LS-Dyna.

High Impact

Aimed at the TriboForm® Library® and continuously updated standard tribology and friction database, and export results into commercial FEM simulation packages. This enables advanced friction and lubrication simulation in the most commonly used FEM software packages, including AutoForm, PamStamp, LS-Dyna.

Unmatched Accuracy

Advanced friction and lubrication simulation in metal forming simulations, enabling advanced simulation of virtual quality factors, including simulation of frictional phenomena.

Your benefits

TriboForm® software includes a selection of simulation strategies which can be varied to maintain the same exactness, efficiency and reliability throughout the development process. Let TriboForm® Engineering customize your TriboForm FEM Plug-In® for technical user cases, and continuously updated standard tribology and friction database, and export results into commercial FEM simulation packages. This enables advanced friction and lubrication simulation in the most commonly used FEM software packages, including AutoForm, PamStamp, LS-Dyna.

TriboForm® Analyzer®

TriboForm® Analyzer® is a software solution enabling users to efficiently simulate, visualize and evaluate tribology, friction and lubrication conditions for a wide range of production processes (metallic and non-metallic), tooling and continuously updated tribology and friction database, and export results into commercial FEM simulation packages. This enables advanced friction and lubrication simulation in the most commonly used FEM software packages, including AutoForm, PamStamp, LS-Dyna.

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Follow us and stay informed about TriboForm®

www.triboform.com

A new dimension to metal forming simulations

high impact / easy integration / unmatched accuracy