



KOMPAS-3D

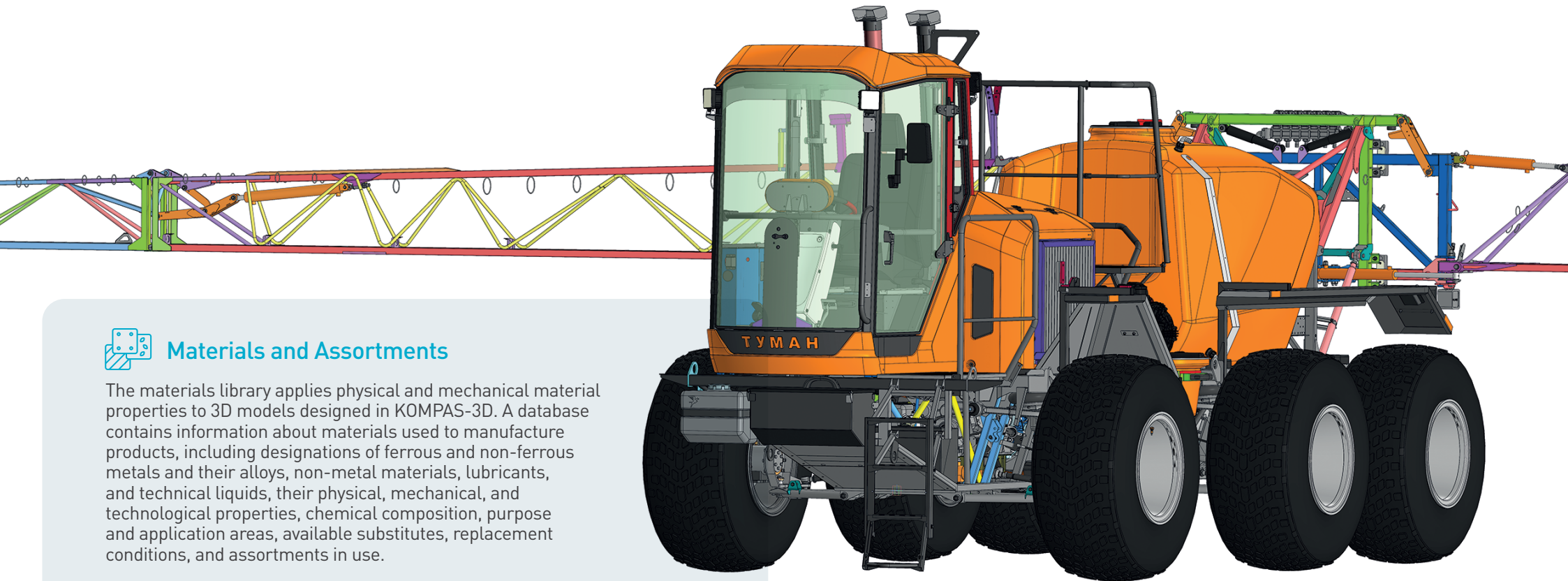
KOMPAS-3D is widely used for product design across various industries, including aerospace, automotive and transportation, agriculture, energy, oil and gas, chemical industries, electronic equipment, instruments and components, shipbuilding, industrial machinery and heavy equipment, rail transportation, metallurgy, industrial and civil construction, consumer goods, etc.

The foundation of KOMPAS-3D is its own geometric kernel, C3D®, created by C3D Labs (part of ASCON), along with its own proprietary software technologies. The C3D kernel is already operating on the Linux platform.

KOMPAS-3D also supports top-down collaborative product design and includes tools similar to WAVE and Skeleton technologies: copying geometric objects with "freezing" of associative connections, tracking and managing changes during collaborative work, layout geometry, and more.

Why do users and managers choose KOMPAS-3D?

- 37 years on the market
- Lower Total Cost of Ownership
- Perpetual licenses
- Own geometric kernel
- Extensive automation capabilities
- FEM, CFD, and CAM
- High productivity and stability with large assemblies
- Reverse engineering and direct modeling
- Design checker and 3D diagnostics tools
- Geometry import from various CAD formats with recognized model trees for data transfer
- Fully parametric 2D&3D
- Built-in learning tools, free Online Academy, and YouTube tutorials



Materials and Assortments

The materials library applies physical and mechanical material properties to 3D models designed in KOMPAS-3D. A database contains information about materials used to manufacture products, including designations of ferrous and non-ferrous metals and their alloys, non-metal materials, lubricants, and technical liquids, their physical, mechanical, and technological properties, chemical composition, purpose and application areas, available substitutes, replacement conditions, and assortments in use.



Equipment: Pipelines 3D

A specialized application for automating pipeline design routine tasks. The library is intended for use in mechanical engineering and utility network design. This add-on allows you to create piping layouts, arrange pipeline elements, use different fittings and couplings, and edit pipe diameters and thicknesses.



3D shafts & mechanical gears

This application automates the design and construction of three-dimensional models of shafts, bushings, and mechanical transmission elements in the KOMPAS-3D environment. It enables rapid modeling of multistage shafts, including structural elements such as holes, splines, and keyways.



Mechanics: Springs

This application allows you to perform design and verification calculations for compression, tension, and torsion springs, as well as Belleville, conical, and shaped springs. Drawings and 3D models are automatically generated based on the calculation results.



Equipment: Steel Structures 3D

This application is developed to automate the design process of metal constructions from metal rolling profiles. The library is intended for use in mechanical engineering and steel framework design. It allows you to create frameworks based on trajectories and selected profiles.

 **APM FEM**

This application performs rapid calculations for solid objects in the KOMPAS-3D system and visualizes the results. This set of functionalities allows you to model a solid object and comprehensively analyze the behavior of the computational model under various conditions, including statics, natural frequencies, stability, and thermal loading.

 **KompasFlow**

KompasFlow has a simple interface for express analysis of a product, helping to determine the forces and moments acting on it, as well as the flow structure inside or around it. This add-on allows you to model single-component gas flow, fluid flow, heat conduction, and natural convection with consideration of radiative heat transfer. It supports parallel computing on a single multi-core processor.

 **Fastening Connections**

This module helps you create a set of fasteners and place them in the assembly. The main features include: creating detachable bolted and screw connections, managing fastener sets within assemblies, positioning fasteners in assembly units, selecting bolt and screw length based on thickness and material composition, and choosing corresponding elements (washers, nuts) for each bolt or screw.

 **Unwrap Application**

This application is designed to automate the design of dust, gas, and air flues, pipelines, and similar sheet metal parts. This add-on automates labor-intensive calculations and constructions, and considerably accelerates the creation of working drawings for sheet metal blanks. The Unwrap application also allows you to create unwrap drawings of selected units with specified precision, calculate product mass, and save coordinates of curves to text files.

 **Powerful 2D Drafting**

KOMPAS-Graphic is a fully parametric 2D CAD solution for technical drafting and documentation. It allows you to create everything from product drawings and diagrams to specifications, instructional materials, and technical documentation. With its flexible tools and extensive libraries, it is suited to demanding tasks across all industries. While KOMPAS-Graphic is a powerful standalone solution for 2D documentation, it is also integrated within the KOMPAS-3D modeling system to provide a completely automated design workflow.

The main types of 3D modeling in KOMPAS-3D

SOLID MODELING:

achieved through shape-forming operations (extrusion, rotation, sectional operations, etc.) and shape-modifying operations (fillets, chamfers, holes, slopes, etc.).

SURFACE MODELING:

generates model geometry based on surfaces (which can include linear, conical sections, along curves or by points, or along paths, among others). Supports G0, G1, and G2 surface continuity.

SHEET METAL MODELING:

used for modeling sheet metal parts employing bending or stamping methods, followed by creating flat patterns.

OBJECT MODELING:




focuses on modeling assemblies using ready-made standard industry components such as fasteners, cable channels, hoses, and metal structures.

 **Nesting**

Nesting add-on arranges 2D shapes within a rectangular sheet area, either manually or automatically. It accepts contours from KOMPAS-3D files, along with sheet dimensions and placement parameters, and calculates the most efficient cutting patterns for your blanks. This add-on covers the full nesting workflow — from creating and optimizing layouts to calculating efficiency, generating nesting maps in KOMPAS-3D and DXF formats, producing reports, and editing the final layout as needed.



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