

ALIBRE DESIGN™

THE BEST CHOICE FOR 3D CAD.

Alibre Design 10.0 is a powerful, fully featured low-cost application for 3D parametric solid modeling. With it, you can create precise 3D mechanical designs and generate and detail associative 2D drawings. Alibre Design has extras not found in other mid-range solid modeling applications — real-time collaboration and a direct connection to the Alibre Assistant for expert, on-demand support.

New and Improved Features in 10.0

- New integrated Alibre CAM add-on*
- Greatly enhanced 2D performance
- Enhanced user interface
- New “Fast View” mode for large assembly drawings
- New tools to directly edit part geometry**
- New tool to create topology based patterns**
- New Repository Search and Where-used features
- Improved Home Window

Alibre Design Professional adds:

- Support for design configurations
- Integrated sheet metal design
- Integrated data management and sharing
- Alibre PhotoRender for generating high-quality photorealistic images
- Three part libraries featuring millions of standard and manufacturer-specific parts: CAD Alibre Part Library, TraceParts and CadRegister

- First-pass linear static finite element analysis with ALGOR DesignCheck
- The ability to create 3D PDF files with animated exploded views and sequences of steps
- Direct Editing Toolset for imported models

Alibre Design Expert includes everything in Alibre Design Professional plus:

- Alibre Motion for motion simulation analysis
- EngineersToolbox (ETBX) solution library for engineering design and analysis
- Machinist ToolBox, a shop utility that provides easy access to useful information and calculators
- A 100 MB server repository while on maintenance
- Alibre CAM, Alibre's fully integrated CAM solution



* Available in Expert

** Available Professional and Expert

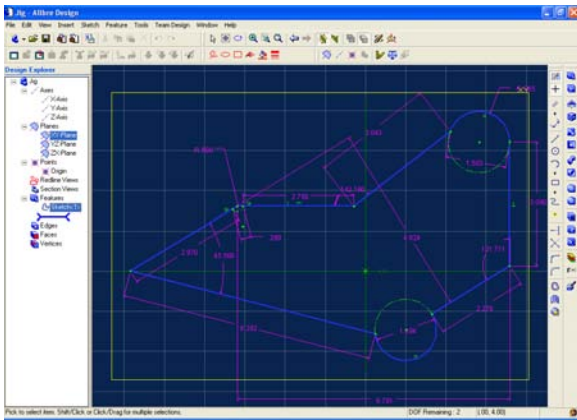

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ALIBRE DESIGN

PART AND ASSEMBLY MODELING

Sketching. In Alibre Design, all 3D geometry starts with a sketch, either 2D or 3D. Pick a plane or face; then create a sketch and use it for feature creation. Create both design and construction geometry with these sketching tools:

- Line
- Circle
- Ellipse
- Elliptical Arc
- Arc
- Rectangle
- Spline Curve: advanced editing, tangency control, import/export support, etc.
- N-sided regular polygon tool



Sketch Constraints. The intelligent sketcher automatically detects and infers relationships between sketch entities and construction geometry, capturing sketch constraints on the fly. Sketch constraints, which can also be applied manually, include:

- Fixed
- Vertical
- Horizontal
- Intersection
- Symmetric
- Coradial
- Concentric
- Collinear
- Coincident
- Midpoint
- Equal
- Tangent
- Perpendicular
- Parallel

Sketch Operations. Refine sketches with the following operations:

- Extend
- Trim
- Mirror
- Offset
- Fillet
- Chamfer
- Pattern
- Copy

Dimensioning. Use dimensions to parametrically define and constrain sketches. Input an absolute value, or drive dimensions from equations that reference other sketch dimensions, or from an external spreadsheet. A status display indicates the remaining degrees of freedom to aid in correctly constraining your sketch. Or automatically dimension and fully constrain the sketch with the auto-dimension tool.

Part Modeling. Alibre Design is a parametric (dimension-driven), feature-based modeling system. Alibre Design utilizes advanced component technology, including the ACIS modeling kernel and D-Cubed constraint manager, to create precise 3D solid models. A rich set of 3D features is supported:

- Extrude boss
- Extrude cut
- Revolve boss
- Revolve cut
- Loft boss
- Loft cut
- Sweep boss
- Sweep cut
- Helical boss
- Helical cut
- Fillet (fixed and variable radius)
- Chamfer
- Shell
- Draft
- Hole

Additional modeling operations complete the geometry creation and editing tools:

- Mirror
- Pattern (linear and circular)
- Remove face
- Offset face
- Move face
- Suppress
- Edit
- Reorder
- Rollback/roll forward

New Direct Editing Tools. Edit or delete model features with a simple push or pull of the mouse, without having to worry about the design history or editing features or sketches. Make rapid alterations with ease, design conceptually, or edit imported models that come without a design history. Direct Editing is available in Alibre Design Professional and Expert - these tools include:

- Push/Pull Face
- Push/Pull Radius
- Push/Pull Pocket or Boss
- Remove Tool
- Topology Pattern

Design Booleans. Associative feature and history-based Boolean operations — useful for creating mold cavities, tools and dies.

- Support for addition/join, subtraction and intersection
- Multiple parts and assemblies can be used as "tools"

Sheet Metal Design. Create sheet metal parts with standard features including fold and unfold, tabs, flanges, hems, jogs, cuts and dimples. Sheet metal parts can be easily inserted into assemblies with other 3D part models. Only available in Alibre Design Professional and Alibre Design Expert.



Assembly Modeling. In an Alibre Design assembly workspace, users can accurately position, constrain and dimension parts relative to each other to quickly develop complete assemblies.

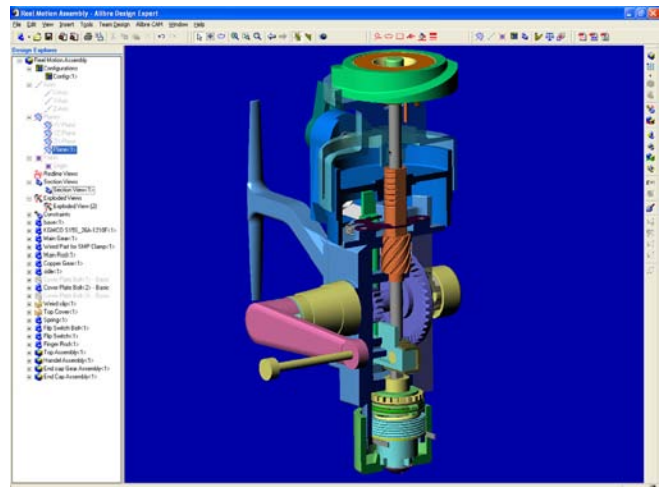
- Choice of assembly design method:
 - Bottom-up: Design parts individually and then combine them to create an assembly.
 - Top-down: Start with a new assembly and design all the parts within the assembly. Any existing part can be referenced while designing or editing others.
- Create, insert and edit parts in an assembly
- Assembly constraint types:
 - Mate
 - Align
 - Tangent
 - Orient
 - Angle

Constraints can also reference construction geometry and features within constituent parts. Furthermore, the Auto Constrain tool in Alibre Design automatically applies align and mate constraints for fast, intuitive assembly.

You can also manipulate, build or interrogate parts using the following assembly operations:

- Move parts
- Rotate parts
- Pattern parts
- Mirror parts
- Anchor parts
- Hide individual parts
- Insert multiple part instances
- Check for interferences
- Create exploded views:
 - Auto-explode assemblies to preset distances
 - Drag parts as desired

Open larger assemblies quickly with "light assembly loading." Display information loads first; then geometry, constraints and feature details when needed.



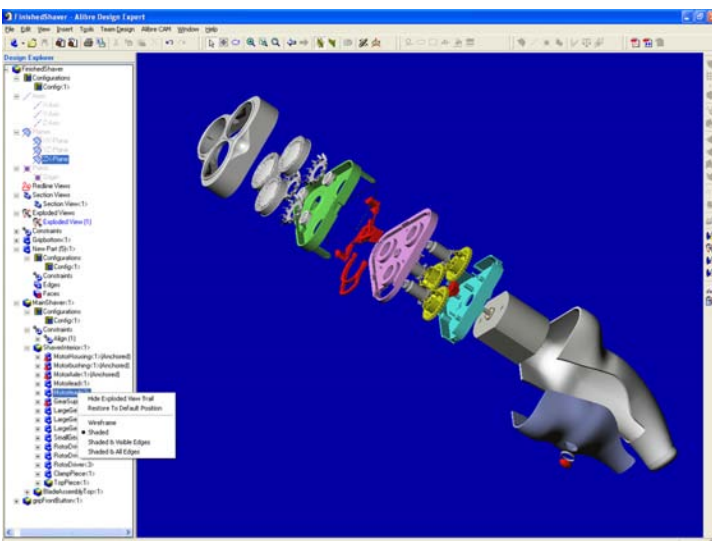
Reference Surfaces. Modeling operations may use imported free-form surfaces from applications such as Rhino3D to create more complex solid models.

- Extrude and sweep features to reference surfaces
- Trim solid bodies with reference surfaces
- Thicken a reference surface into a solid body
- Define reference geometry (lines, arcs, etc.) using reference surfaces
- Constrain assembly components using reference surfaces

Design Configurations. Users can efficiently build and manage projects with a variety of similar parts or assemblies. Designers can better explore and test concepts or show different stages of operation all in a single model without having to design each variation in separate files. Only available in Alibre Design Professional and Alibre Design Expert.

Additional Modeling Highlights:

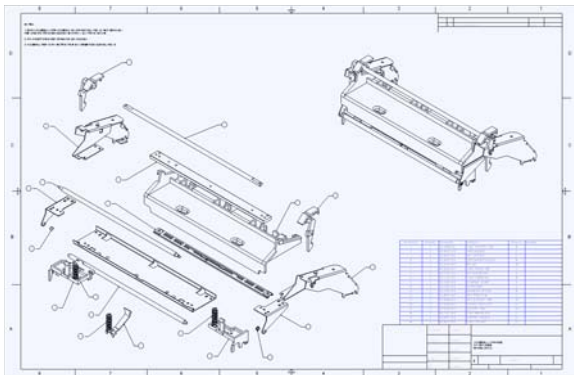
- Calculate physical properties for a part or assembly, such as volume, mass, surface area, center of mass and principal axes of inertia.
- Create 3D section views. Make precise measurements on the sectioned geometry or create a new sketch from the sectioned edges.
- Save and reuse sketches with the Catalog feature.
- Generate a new sketch or reference figures from existing geometry using the project-to-sketch function.
- Insert annotations to communicate manufacturing information (notes, datums and datum targets, weld symbols, surface finish, etc.)



2D DRAWING CREATION AND DETAILING

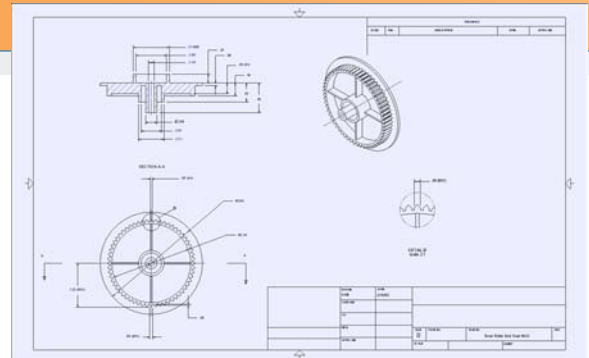
Generate and detail 2D associative drawings in drawing workspaces. Automatically create standard 2D orthographic views (front, top, right, etc.) from the part or assembly. Associativity is maintained between drawings and 3D models — geometry and dimensions changed in the model are reflected in the drawing, and vice versa. Standard drawing templates (ANSI and ISO) are available, or you can create your own templates according to your company standards.

- Custom view types:
 - Detail views — automatic update when detail boundary changes
 - Section views — normal and stepped
 - Broken views
 - Auxiliary views
 - Exploded views
- Multiple font types and styles
- Layers and layer attributes — visibility and color
- Drawing operations
 - Balloon callouts
 - Rotated text
- Dimensioning:
 - Control dimension styles and appearance — supports popular standards like ANSI, DIN, JIS
 - Modify driving dimensions
 - Insert reference dimensions
 - Delete dimensions



Bill of Materials (BOM). Generate BOMs that are directly associated with an assembly model. Create custom BOM templates with an intuitive spreadsheet interface. Associativity between the BOM and the assembly ensures accuracy throughout the design and manufacturing process; if the assembly changes, the BOM is updated automatically.

- Customize table properties — column headings, font size/color, row/column append, sort, etc.
- Customize BOM templates
- Hide or show borders
- Launch the BOM editor from a drawing workspace
- Associate a hidden BOM with a drawing sheet
- Use standard BOM headings — description, part name/number, revision, supplier, material, etc.
- Print a BOM
- Export BOM as .CSV file for MRP systems



Interoperability. Alibre Design is based on STEP (Standard for the Exchange of Product Model data) to ensure robust interoperability with all other major CAD systems. The open STEP standard provides a common data format that is not controlled by any single CAD vendor. As a result, Alibre Design users can generate data without tying their future to any particular application. Plus, Alibre Design can import and export data in a wide range of formats.

Import: STEP (AP 203/214), SAT (ACIS), IGES, DXF/DWG (2D)

Export: STEP (AP 203/214), SAT (ACIS), IGES, STL, DXF/DWG (2D), CSV (BOM)

Integrated Data Management. Organize and securely store data on your hard drive, a network drive or a secure Alibre server through the Repository. Share files with authorized contacts securely through access rights. Check in/out and version tracking show who made changes and allow you to go back to an earlier version if necessary. Files created outside of Alibre Design may be stored in the Repository to keep related project data in a central location. Available in Alibre Design Professional and Expert.

3D PDF Publishing. Model only publishing available in all packages. Alibre Design Professional and Expert also include the ability to create 3D PDF files with animated exploded views and sequences of steps. Acrobat 3D Reader free of charge.

SYSTEM REQUIREMENTS

Supported Operating Systems

- Windows® XP Professional or Home Edition
- Windows® 2000 Professional SP2 or later
- Windows Vista Business, Home, or Ultimate

Software Requirements

- Internet Explorer 4.01 SP2 or later
- Microsoft Virtual Machine
- DirectX 9.0c

Internet Connection (recommended)

Minimum Hardware Requirements

- Intel Pentium or equivalent processor
- 512 MB RAM
- 1024x768 screen resolution, 1280x1024 or greater recommended

- Video card that supports with DirectX 9.0c 64 MB or higher
- Color: 16-bit or 32-bit
- 200 MB available hard disk space
- 800 MB Virtual Memory
- CD-ROM drive
- Mouse or pointing device

For Windows Vista, we recommend the following changes:

- Intel Pentium or equivalent processor: 1 GHz or faster (2 GHz or faster with >500 parts)
- 1024 MB RAM or more
- Video Card: 128 MB or higher
- Color 32-bit

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