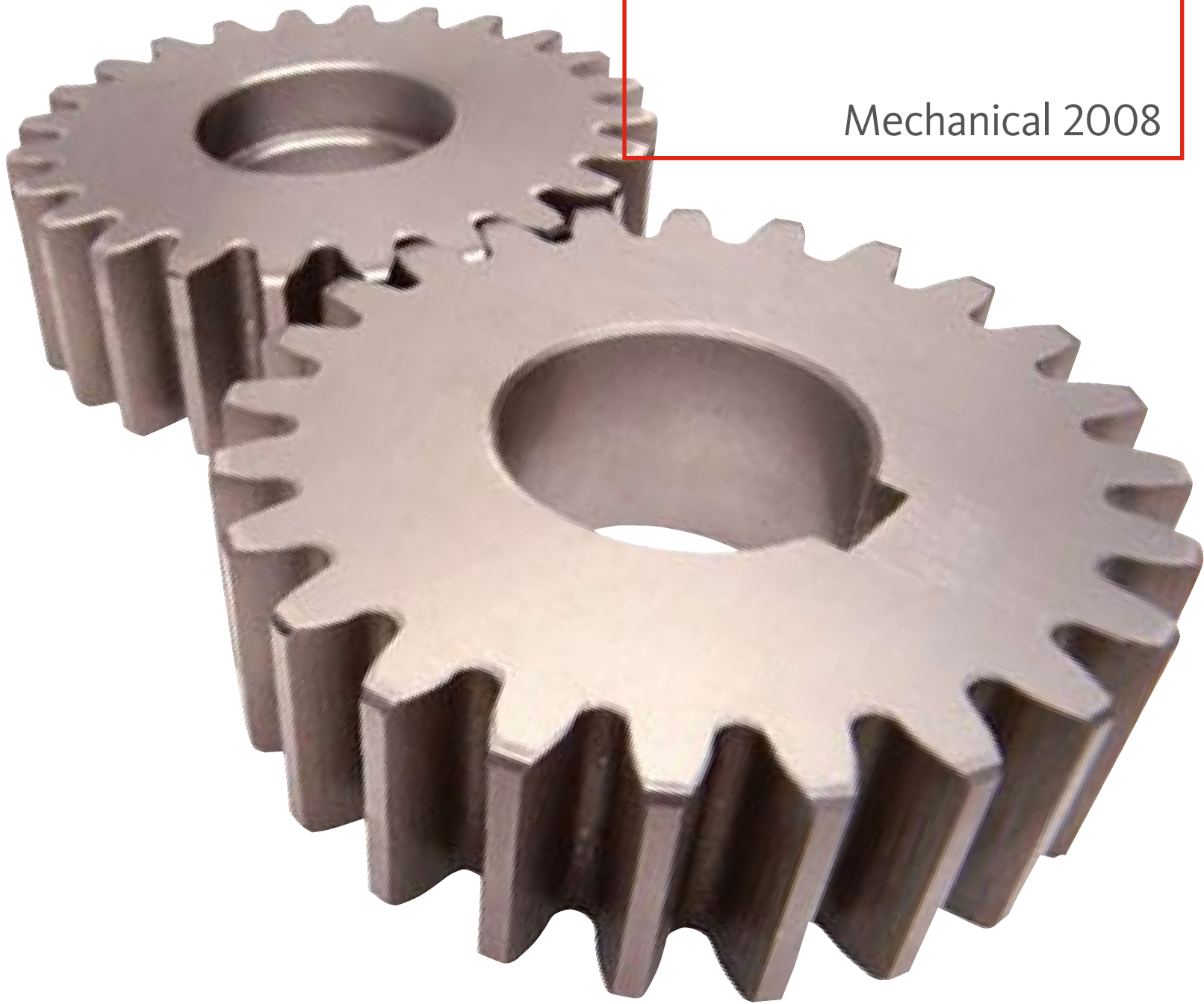


Mechanical design
with muscle.

AutoCAD[®]

Mechanical 2008



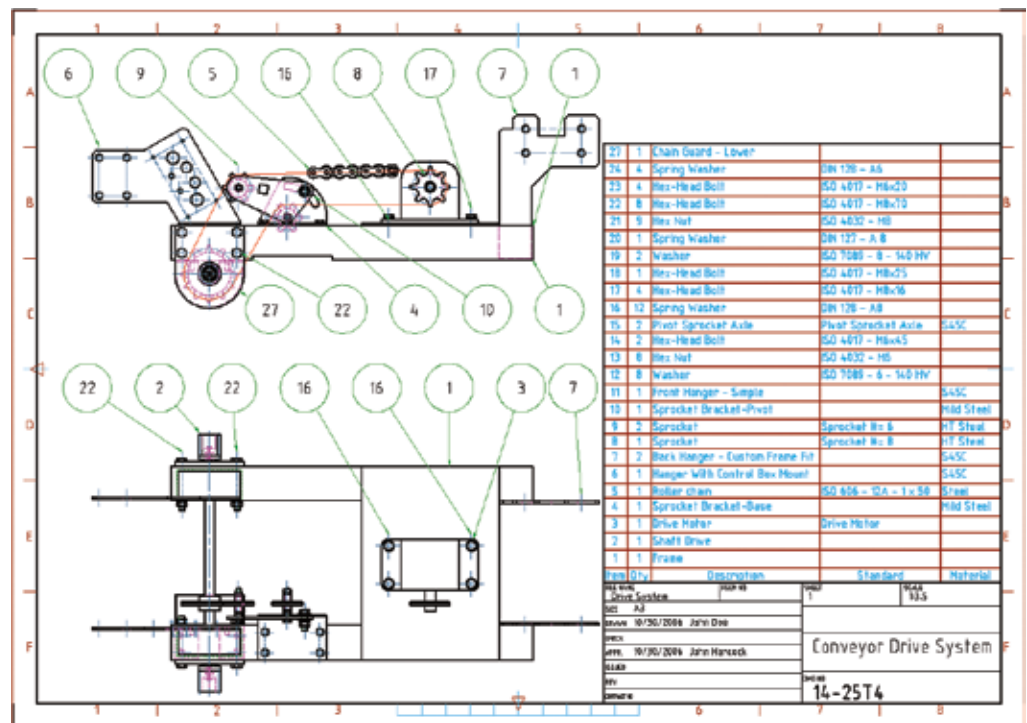
The AutoCAD Mechanical Advantage

To compete and win in today's design marketplace, engineers need to create and revise mechanical drawings faster than ever before.

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AutoCAD® Mechanical software, a purpose-built design and drafting application, offers significant productivity gains over basic AutoCAD® software by simplifying complex mechanical design work. With standards-based libraries of parts and tools for automating design tasks, AutoCAD Mechanical accelerates the mechanical design process. Designers gain a competitive edge by saving countless hours of design and rework, so they can spend time innovating rather than managing workflow issues. AutoCAD Mechanical provides innovative design and drafting tools that are wholly focused on ease of use for the AutoCAD user.



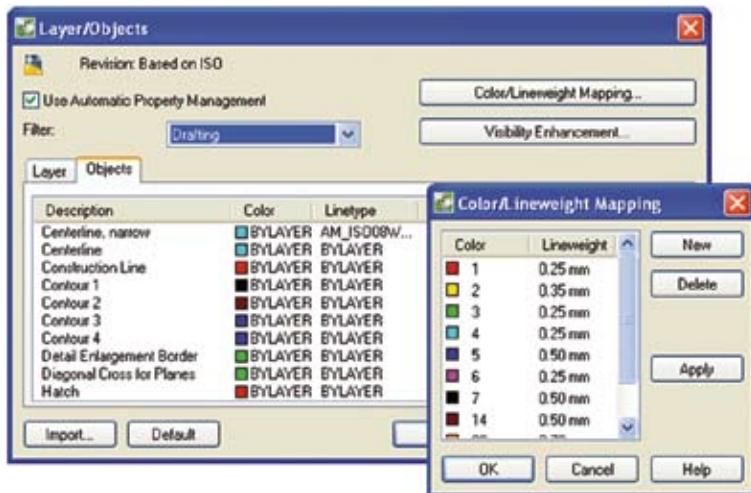
Reduce Complex or Repetitive Tasks

AutoCAD Mechanical helps you reduce complex and repetitive tasks by providing a simplified drafting environment for manufacturing.

AutoCAD Mechanical delivers high-impact productivity tools to AutoCAD users who are performing updates and repetitive design changes, reducing the amount of rework associated with these tasks for immediate productivity gains.

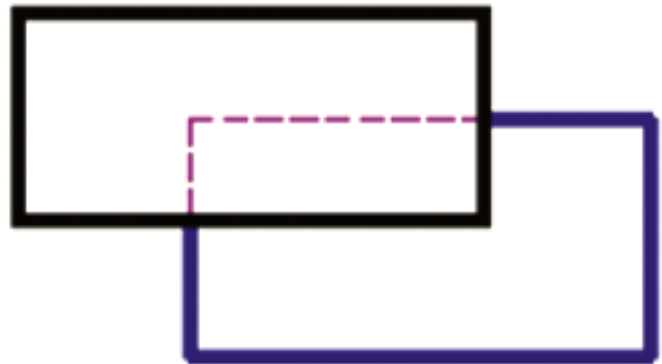
Layer Management

Spend less time manually changing and manipulating layers, as the intelligent layer management system in AutoCAD Mechanical automatically places items on the correct layer, with the correct color and linetype, as users create drawings. Customize layer types based on company requirements, including text and hatching, center, construction and hidden lines, symbols and notes, title borders, and much more.



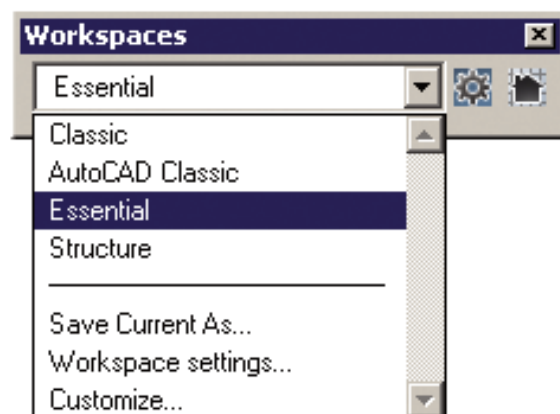
Associative 2D Hide

Reduce drafting effort with automatically generated hidden lines that update to reflect drawing revisions. Perform 2D hidden-line calculations based on user-defined foreground and background selections that update automatically. These selections automatically redraw geometry, reducing the tedious manual task of trimming and changing properties of lines in AutoCAD.



NEW Workspaces

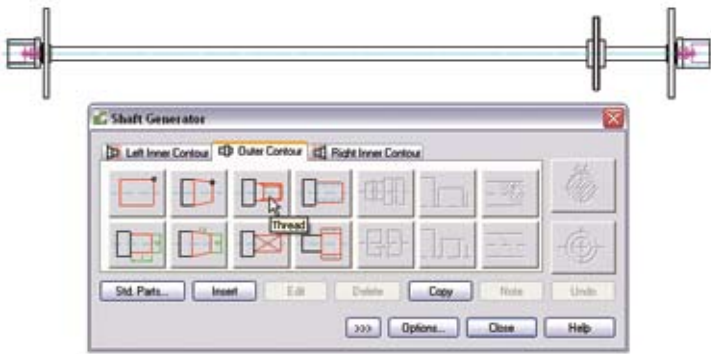
Quickly customize toolbars and settings with the workspace toolbar, which offers a pull-down menu where designers can easily store and access different user-interface setups. Several prebuilt workspaces ship with the product, including beginner workspaces that make it easier to learn AutoCAD Mechanical.



Reduce Complex or Repetitive Tasks

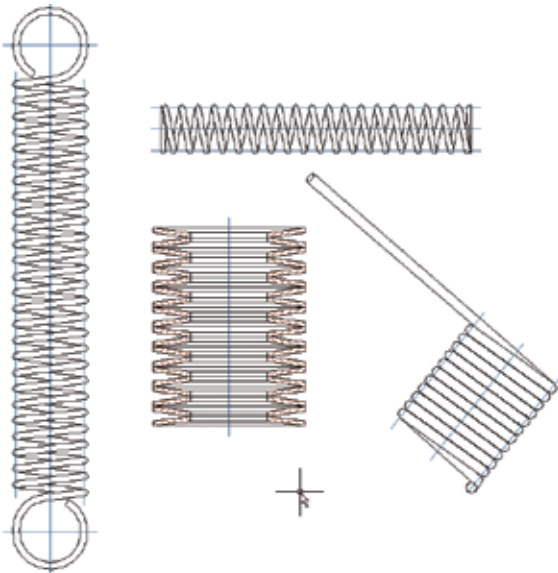
Shaft Generator

Accelerate shaft drawings and analysis with minimal input and effort. The extensive library of common features and parts makes it easy to finish the drawing. The shaft generator creates drawing views of solid and hollow shafts. Add common features such as center holes, chamfers, cones, fillets, grooves, profiles, threads, undercuts, and wrench fittings. In addition, standard parts commonly found in shafts, such as bearings, gears, retaining rings, and seals, are supported and conveniently grouped together. Automatically create associated side views and validate the capability of completed shafts with built-in calculated graphs and tables.



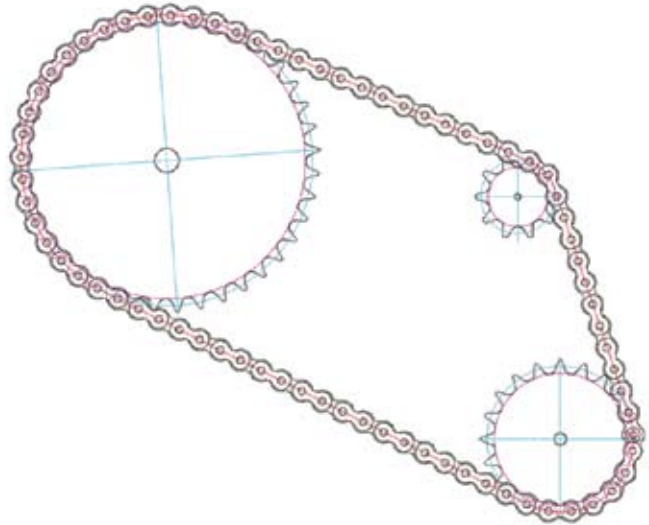
Spring Generator

The spring generator is a fast, valuable, and easy-to-use tool that enables users to select, calculate, and insert compression springs, extension springs, torsion springs, and Belleville spring washers in a design. Control the representation type of the spring, and create a specification form to incorporate in the drawing. The spring calculator helps users select the right spring on the first try.



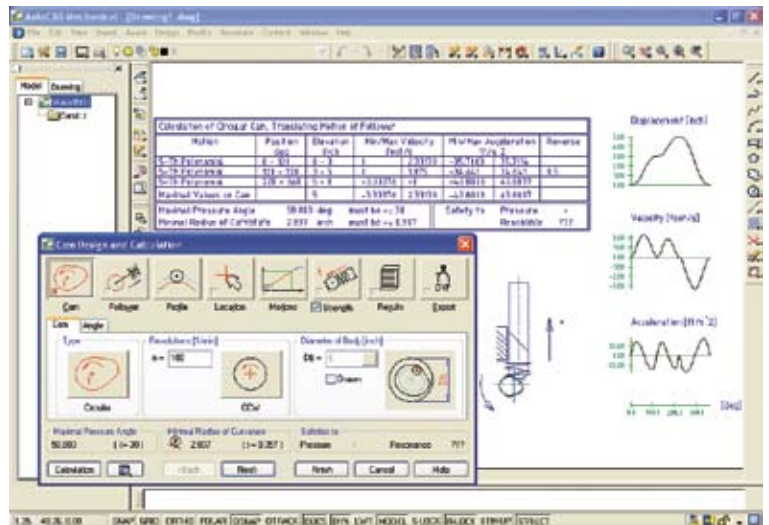
Belt and Chain Generator

Quickly and easily create chain and belt assemblies that are based on engineering calculations for optimum performance. Automatically calculate optimal lengths for chains and belts based on user input, and insert these assemblies into a design. Simply select belts and chains from the standard libraries to get started.



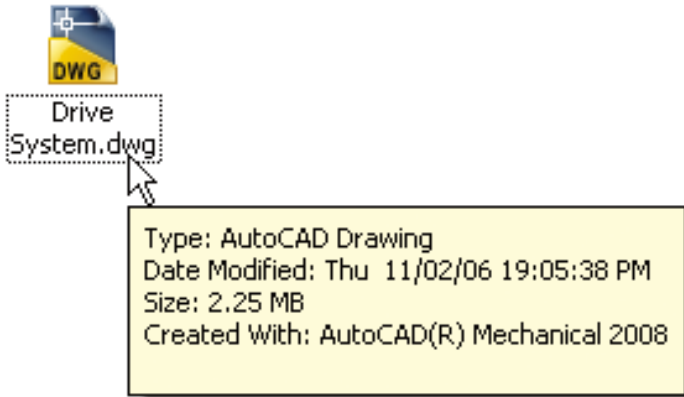
Cam Generator

Quickly design and analyze cams while increasing access to crucial information about the cam's functionality. The cam generator creates linear, circular, and cylindrical cams based on the input border connections set by the user. Calculate and display acceleration and jerk, as well as the cam curve path. Couple driven elements to the cam, and create computer numerical control (CNC) data via the curve on the path.



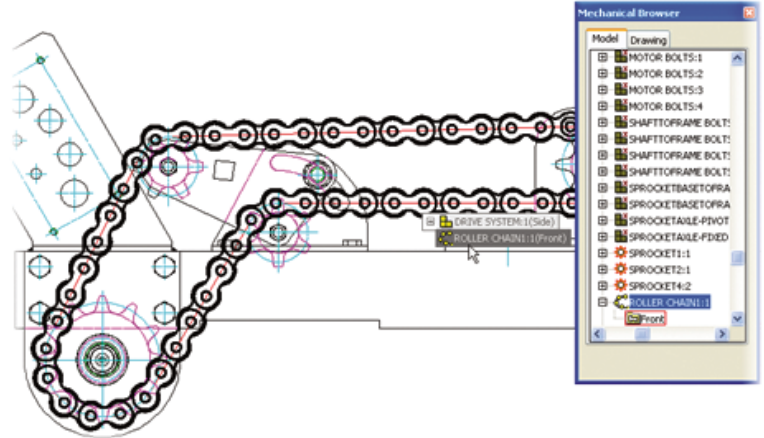
NEW Autodesk DWG Product Recognition

Easily identify which Autodesk® product created a DWG™ file, and open the file with the optimal program for maintaining file intelligence. When the user moves the cursor over the DWG icon, a small window appears with information regarding which product was used to create the DWG file.



NEW Design Navigation

Use the Design Navigation feature to better understand how designs fit together. As the user moves the cursor across a design, a small window displays part names. Expand this window to show parent/child relationships inside assemblies. The entire part geometry is highlighted, with a single grip point placed at the base point and an arrow that shows default orientation.



ENHANCED Configuration and Setup Guide (Help Document)

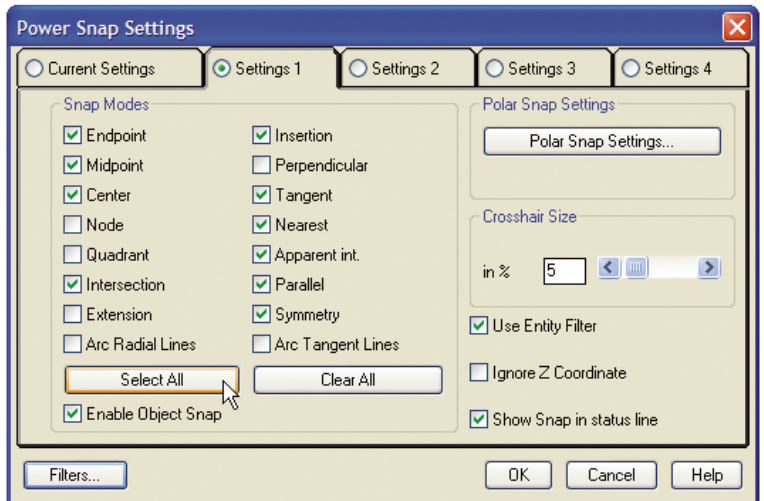
Use this guide to make informed decisions about configuring and setting up AutoCAD Mechanical for the first time. The guide includes information about basic design workflows and a detailed AutoCAD-to-AutoCAD Mechanical feature comparison chart to familiarize users with AutoCAD Mechanical.

ENHANCED Software Development Toolkit (SDK)

Customize and combine features in AutoCAD Mechanical to achieve higher levels of productivity. The SDK for the API (application programming interface) provides information to customize and automate individual features or combinations of features in AutoCAD Mechanical. It includes updated API documentation and sample scripts.

Power Snaps

Ease the repetitive task of geometry selection by using task-based power snap settings. AutoCAD Mechanical includes five task-based sets for object snaps, as well as many more options for selecting specific geometry than basic AutoCAD software offers. Quickly choose the snap setting that works best for the task at hand.



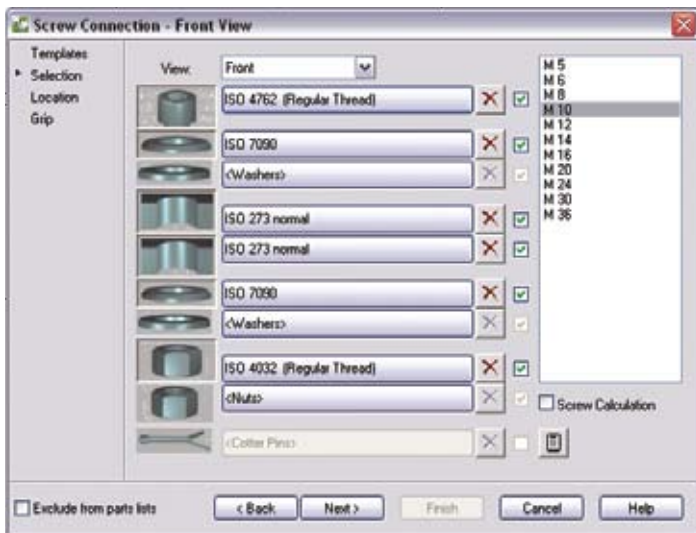
Reduce Errors

When creating mechanical drawings, errors and design inconsistencies can sometimes be inadvertently introduced, wasting time and money.

AutoCAD Mechanical provides libraries of parts as well as support for local and international drafting standards that enable the creation of consistent design requirements in drawings.

Screw Connections

Automate the creation and management of screw connections with this easy-to-use graphical interface that supplies thousands of connection options, while helping users choose the best parts for a design. Create, copy, and edit entire fastener assemblies at one time. Pick the desired type of screw, corresponding washers, and type of nut. Appropriate sizes for nuts, washers, and holes are presented depending on the screw selected and material thickness. The hole is added to the part where specified, and the entire fastener assembly is inserted into the hole. All inserted parts are instantly captured by the bill of materials (BOM) in AutoCAD Mechanical.

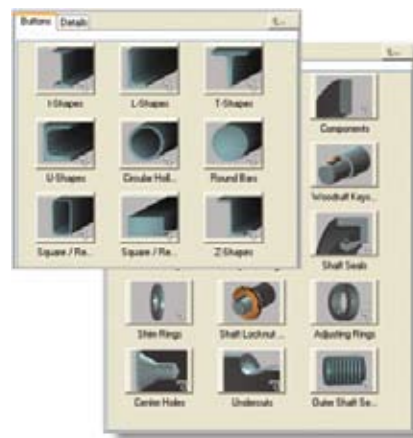


ENHANCED 2D Structural Steel Shapes

By using predrawn geometry, users can create designs more quickly and accurately. AutoCAD Mechanical contains more than 11,000 predrawn standard structural steel shapes that users can quickly incorporate into any design. These include common structural shapes such as U-shape, I-shape, T-shape, L-shape, Z-shape, rectangular tube, round tube, rectangular full beam, and rectangular round beam.

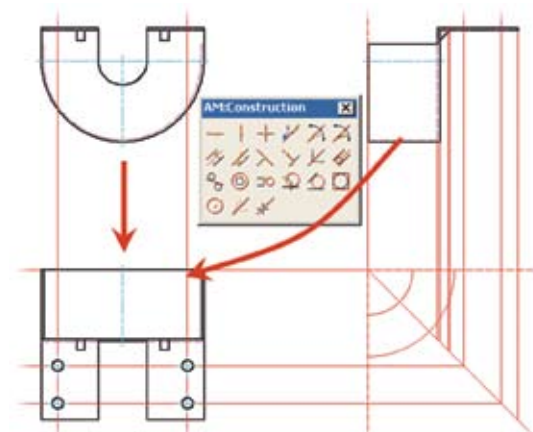
Standard Parts, Features, and Holes

Produce accurate designs faster with parts from the predrawn standards-based library in AutoCAD Mechanical, saving hours of design time. AutoCAD Mechanical contains more than 700,000 parts such as screws, nuts, washers, pins, rivets, and bushings. It also includes 100,000 predrawn features such as undercuts, keyways, and thread ends. When users incorporate these features into a design, the feature cleans up the area in which it was inserted to reduce manual cleanup. AutoCAD Mechanical also contains more than 8,000 predrawn holes, including through, blind, and oblong holes.



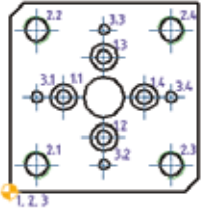
Construction Lines

Reduce the time to create geometry and align drawings with a comprehensive construction line toolset. Construction lines are automatically placed in their own color and layer group, clearly distinguishing them from design geometry. Construction lines do not show up when printing.



Hole Charts

Quickly create accurate hole charts that automatically update based on design changes, reducing errors associated with manual hole charts. When users place standard holes in the design, the software automatically generates hole charts that display detailed design information. Dynamic highlighting helps ensure that all holes needed for the chart are accurately represented. After the user places a chart, it remains linked to the design, dynamically updating to reflect changes and additions. Filtering capabilities enable users to separate different hole sizes into different hole charts for streamlined manufacturing processes.



List of Coordinates for Counterbored Holes						
Hole	X	Y	#	Description	Standard	
1.1	28	35	#5.5	Counterbore	DIN 974 T1-R1 - 5	
1.2	35	28	#5.5	Counterbore	DIN 974 T1-R1 - 5	
1.3	35	58	#5.5	Counterbore	DIN 974 T1-R1 - 5	
1.4	58	35	#5.5	Counterbore	DIN 974 T1-R1 - 5	

List of Coordinates for Tapped M18 Holes						
Hole	X	Y	#	Description	Standard	
2.1	18	18	#8.38	Metric ISO-Thread	ISO 261 - M18	
2.2	18	68	#8.38	Metric ISO-Thread	ISO 261 - M18	
2.3	68	18	#8.38	Metric ISO-Thread	ISO 261 - M18	
2.4	68	68	#8.38	Metric ISO-Thread	ISO 261 - M18	

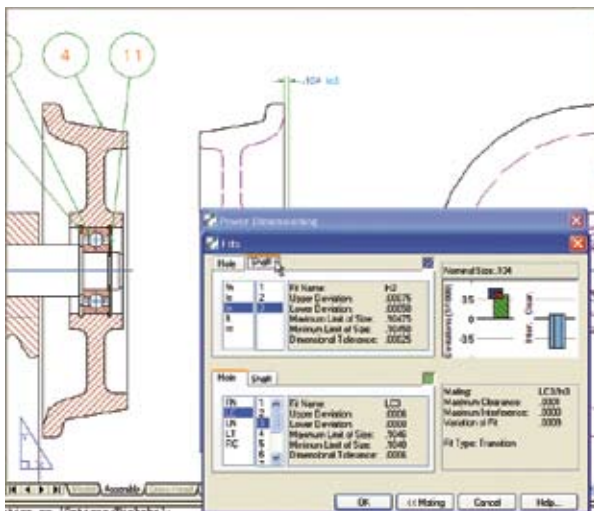
List of Coordinates for Blind Holes						
Hole	X	Y	#	Description	Standard	
3.1	18	35	#4	Blind Hole	Acc. to ISO 273 - 4 x 28	
3.2	36.99	18	#4	Blind Hole	Acc. to ISO 273 - 4 x 28	
3.3	35	68	#4	Blind Hole	Acc. to ISO 273 - 4 x 28	
3.4	68	35	#4	Blind Hole	Acc. to ISO 273 - 4 x 28	

IGES Translator

Use the built-in IGES Translator to improve the accuracy of data shared with team members on different computer-aided design (CAD) systems. Import and export drawings into the industry-standard IGES (Initial Graphics Exchange Specification) format so that team members can easily share drawing data.

Fit Lists

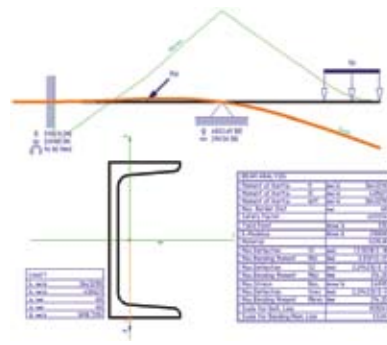
Instantly create fit lists that are linked to the actual information in a design, helping to reduce errors and improve productivity. As special fit information is added to a design, the fit list table updates automatically.



Hole	Shaft	Fit Name	Upper Deviation	Lower Deviation	Maximum Limit of Size	Minimum Limit of Size	Dimensional Tolerance
H1	S1	H7/g6	+0.0175	-0.0075	30.0175	29.9925	0.025
H2	S2	H7/g6	+0.0175	-0.0075	30.0175	29.9925	0.025

Moment of Inertia, Deflection, and Load Calculations

Use built-in engineering calculators to reduce design time and the tedium of manual calculations. Instantly generate many different sets of calculated graphs and tables for screws, bearings, cams, and shafts with minimal additional input. Quickly perform engineering calculations, such as a moment of inertia of a cross section or deflection of a profile with given forces and supports.



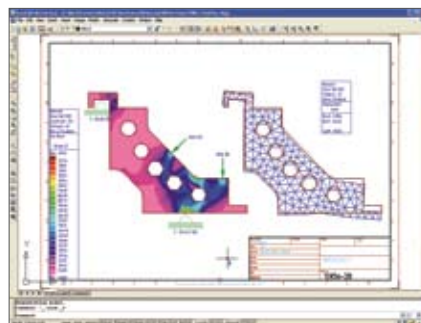
Language Translation

Accelerate language translation with built-in tools in AutoCAD Mechanical, which offers a basic library of prewritten language strings that can automatically translate drawing text from one language to another. The library is an open format that can be expanded and modified.



2D Finite Element Analysis (FEA)

Use the 2D FEA feature to quickly identify potential areas of failure on designs and analyze their integrity under various loads, thereby avoiding costly product testing or field maintenance. The 2D FEA feature is an easy-to-use tool for determining the resistance capability of an object under static load. Add movable and fixed supports to the part to be analyzed, as well as stress points, lines, and areas.



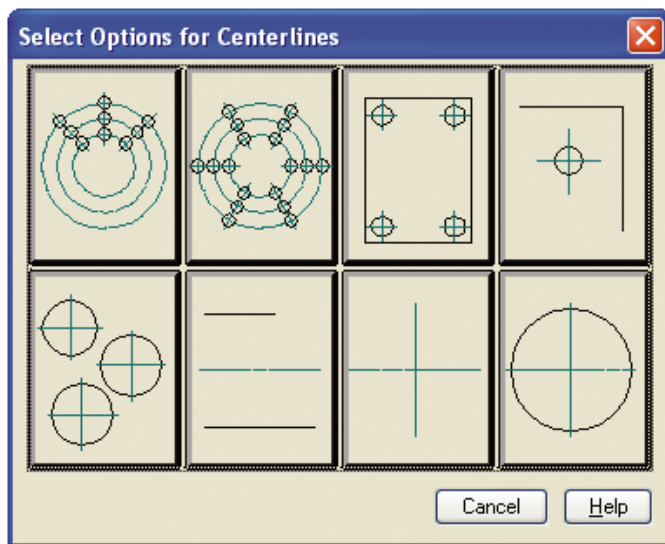
Increase Drafting Productivity

AutoCAD Mechanical is built specifically for mechanical design and provides immediate productivity gains by automating many tasks that must be done manually in basic AutoCAD.

It provides powerful purpose-built tools to save you time and effort while helping ensure your designs are more accurate.

Mechanical Drawing Toolbar

Create drawings more accurately with purpose-built tools. AutoCAD Mechanical provides options beyond those in basic AutoCAD software for drawing creation, including more than 30 options for creating rectangles, arcs, and lines; specialty lines for breakout views and section lines; and mechanical centerlines and hatching additions.

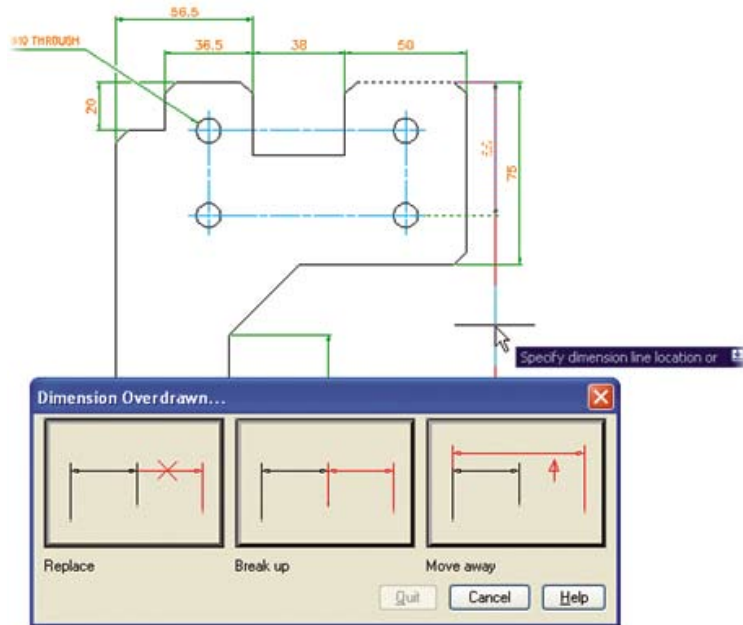


Dimension Stretch

Easily update designs to specific sizes and shapes simply by changing the dimension values. The geometry of a design resizes accordingly. For complex designs, use multiple selection windows to choose exactly which geometry should be changed by the dimension value.

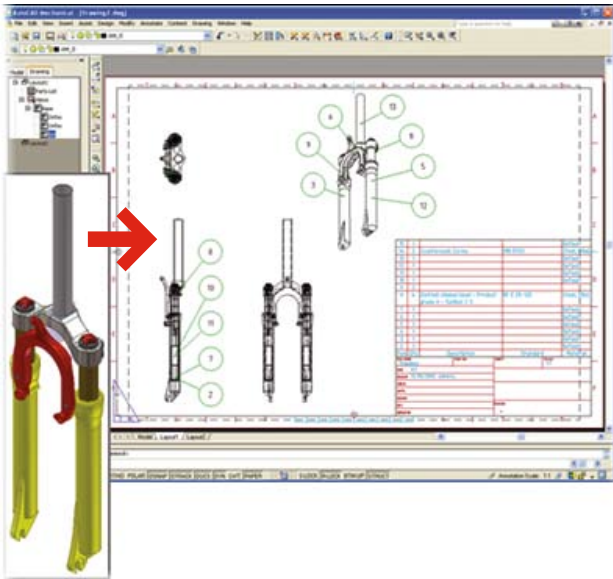
ENHANCED Power Dimensions

Quickly change, edit, or delete dimensions, saving significant time and effort. AutoCAD Mechanical makes AutoCAD dimensions easier to use with abbreviated dialog boxes that conveniently control and expand only the variables relevant for manufacturing. With automatic dimensioning, users can create multiple dimensions with minimal input, resulting in instant groups of ordinate, parallel, or symmetric items that are appropriately spaced. Smart dimensioning tools force overlapping dimensions to automatically space themselves appropriately while integrating tolerance and fit list information into the drawing. New inspection dimensions enable users to specify testing criteria.



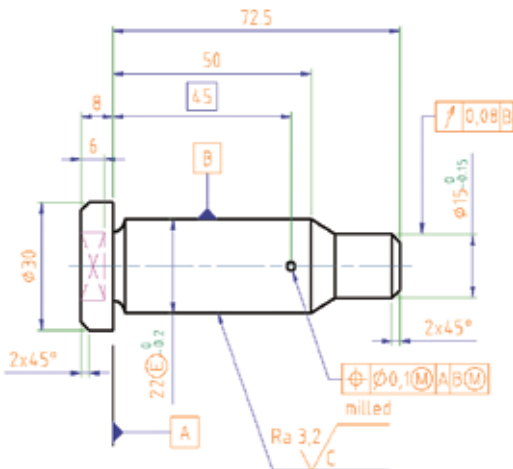
Autodesk Inventor Associativity

Easily detail and document native Autodesk® Inventor™ part and assembly models. Browse through Inventor files, and begin creating new, linked AutoCAD Mechanical drawings that are based on the most current 3D designs. Incorporate design revisions quickly and easily through the associative link, which alerts the AutoCAD Mechanical drawing of changes and regenerates the 2D drawing. Visualize design intent by shading and rotating solid models, and review other attributes associated with the Inventor design. Information stored in Inventor models is automatically available to the BOM database in AutoCAD Mechanical, so users can quickly add balloons, parts lists, and annotations.



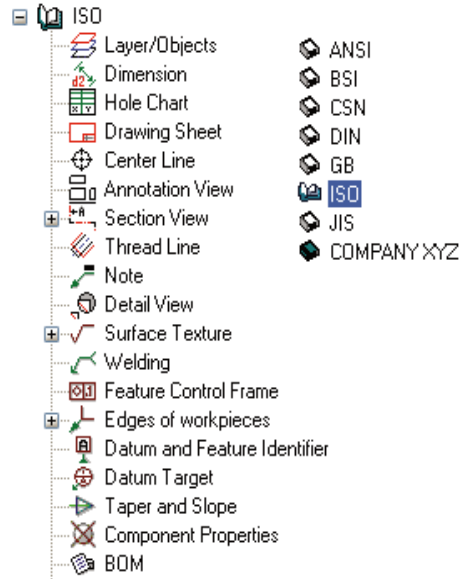
ENHANCED Annotation Symbols and Notes

Save time and increase accuracy by using standards-based mechanical symbols and notes. AutoCAD Mechanical includes drafting tools to create standards-based surface texture symbols, geometric dimensioning and tolerances, datum identifiers and targets, notes, taper and slope symbols, and weld symbols.



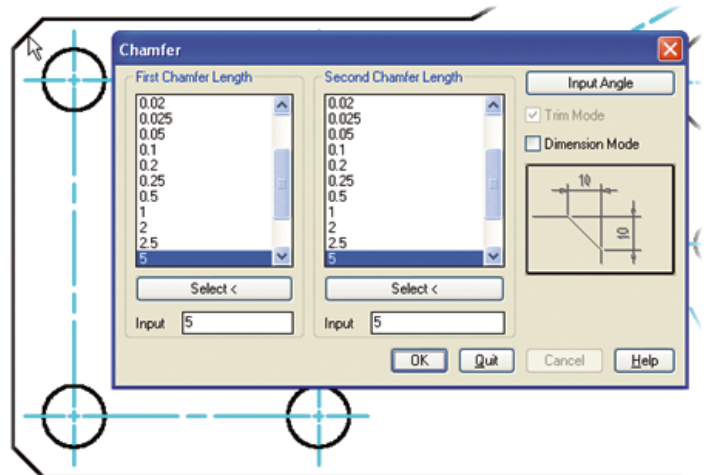
ENHANCED Standards-Based Design

Multiply productivity with tools that help users deliver consistent, standards-based design documentation. AutoCAD Mechanical supports ANSI, BSI, CSN, DIN, GB, ISO, and JIS drafting environments. Using standards-based drafting environments helps groups of users maintain a common form of communication.



Associative Detailing Tools

Update drawings quickly with powerful tools that enable users to edit previous operations, saving valuable design time. Easily re-edit features without having to remove and re-create the original feature. For example, resize a chamfer using the original dialog parameters by simply double-clicking the chamfer.



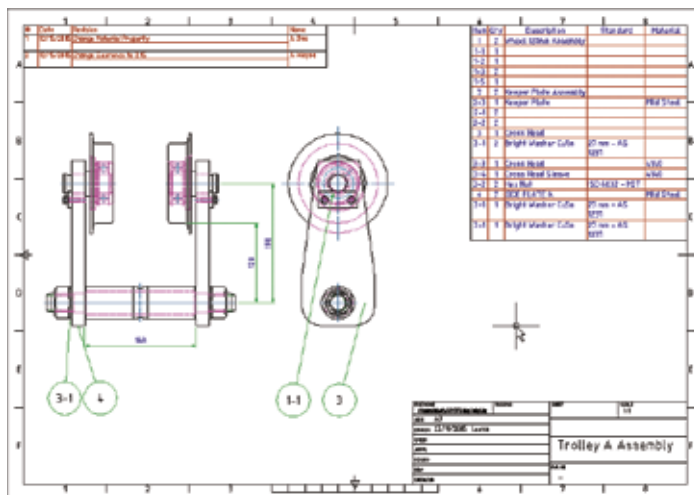
Increase Drafting Productivity

ENHANCED Scaling

Save hours of rework by maintaining only one copy of a drawing, instead of multiple copies at different scales. AutoCAD Mechanical offers several options for scaling drawings to fit on larger or smaller paper sizes. Users can update the scale factor and the drawing will correctly resize. All annotations (text, dimensions, blocks, hatches, and linetypes) remain appropriately displayed.

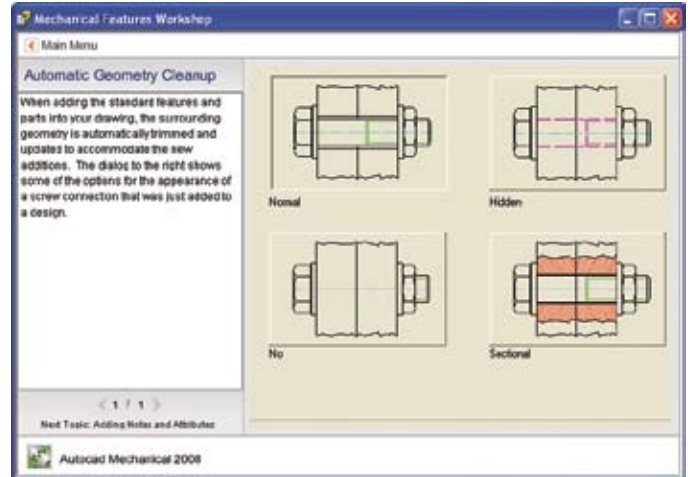
Title Blocks and Revision Blocks

Get company drawings started quickly with uniform, precreated title and revision blocks. AutoCAD Mechanical includes a full set of configurable title and revision blocks in both English and metric units. Users can customize these blocks with company-specific information.



NEW Mechanical Features Workshop

Use simple tutorials to jump-start understanding of the most popular features in AutoCAD Mechanical. Based on the popular New Features Workshop in AutoCAD software, this interactive guide shows new users how they can make incremental productivity improvements by using AutoCAD Mechanical.



NEW Paper Space Annotation Views

Reduce errors and drafting time by easily creating multiple paper drawings from one master model. Add specific parts and assemblies directly to a paper drawing. Apply visibility, scale, color, and view overrides directly to each drawing without the use of layers. The seamlessly integrated parts list keeps accurate count of how many parts have been added to each drawing for the parts lists totals.



Communicate and Manage Design Data

Provide accurate bill of materials (BOM) information to manufacturing.

AutoCAD Mechanical automatically updates the BOM and includes tools to seamlessly track any changes, helping to keep your teams on schedule by reducing costly stops in production from incorrect part counting, identification, and ordering. In addition, it includes fully integrated data management tools that securely store and manage your work in process design data.

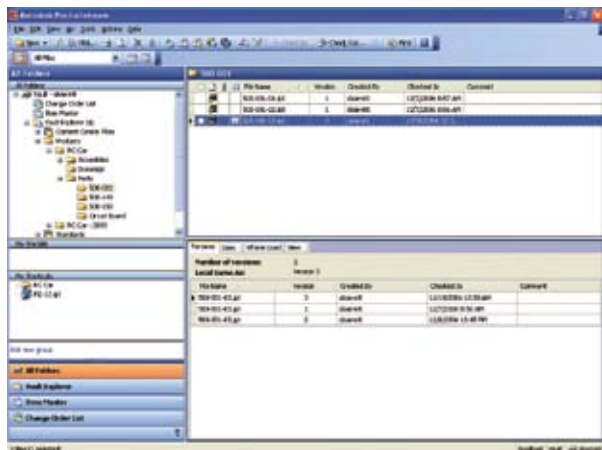
ENHANCED Balloons and Bills of Materials

Create standards-based balloons and parts lists that automatically update as the design changes. AutoCAD Mechanical includes support for multiple parts lists per drawing, collapsible assemblies, automatic recognition of standard parts, and customizable options so features can be revised to match current company practices. The new BOM configuration manager simplifies setup and customization.



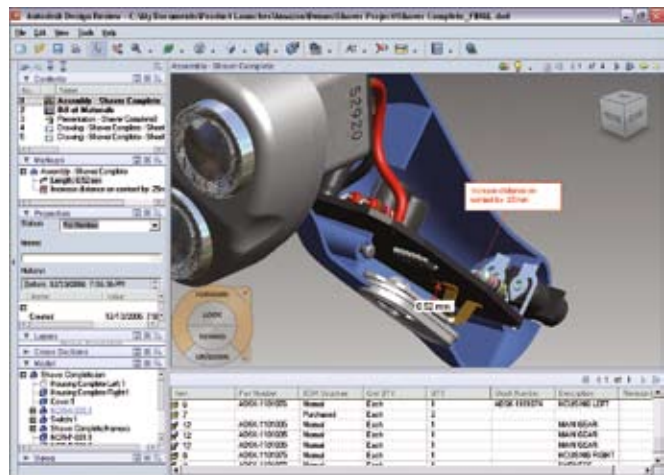
ENHANCED Autodesk Productstream

Organize, manage, and automate key design and release management processes. With Autodesk® Productstream® software your company's designs are complete, accurate, approved, and released to manufacturing in a timely and effective manner.



ENHANCED DWF Tools

Publish DWF™ files directly from Autodesk manufacturing design applications, and securely collaborate on 2D and 3D designs with customers, suppliers, planners, and others outside your engineering workgroup. Using the free* Autodesk® Design Review software, team members can digitally review, measure, mark up, and comment on your 2D and 3D designs while protecting your IP. Tight integration with Autodesk manufacturing products allow for accurate communication of design information including assembly instructions, bill of materials, and FEA results without requiring CAD expertise. Autodesk Design Review automatically tracks comments and their status, and the DWF-based markups can be round-tripped, helping speed the revision process and minimize information loss.



Integrated Data Management

AutoCAD Mechanical includes data management tools for workgroups that securely store and manage work-in-progress design data and related documents, allowing users to accelerate development cycles and optimize their company's investment in design data by driving design reuse.

Autodesk Manufacturing

Never before have design applications and data management tools come together to simplify the way manufacturers design products and drive them through the manufacturing process. Autodesk provides a complete, interoperable line of industry-leading software integrated with a worldwide network of services and partners. Gain access to technical expertise for implementation, and utilize training and support programs direct from Autodesk to help use your design and data management software more effectively. Software maintenance programs allow you to stay up-to-date with the latest product releases and upgrades for your software. Designed to be deployed incrementally for minimal business disruption, Autodesk tools for manufacturing provide the most effective way to stay ahead of the competition and achieve maximum return on your software investment.

Learn More or Purchase

Create and revise mechanical designs faster than ever with AutoCAD Mechanical. For more information about the software, visit www.autodesk.com/autocadmechanical.

For more information on extending the power of your design technology, visit www.autodesk.com/subscription.

For more information on making the most of your software investment, visit www.autodesk.com/consulting.

Purchase AutoCAD Mechanical through your Autodesk Premier Solutions Provider or Autodesk Authorized Reseller. To locate the reseller nearest you, visit www.autodesk.com/reseller.

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