

Technical What's New

AutoCAD[®]

Mechanical 2008

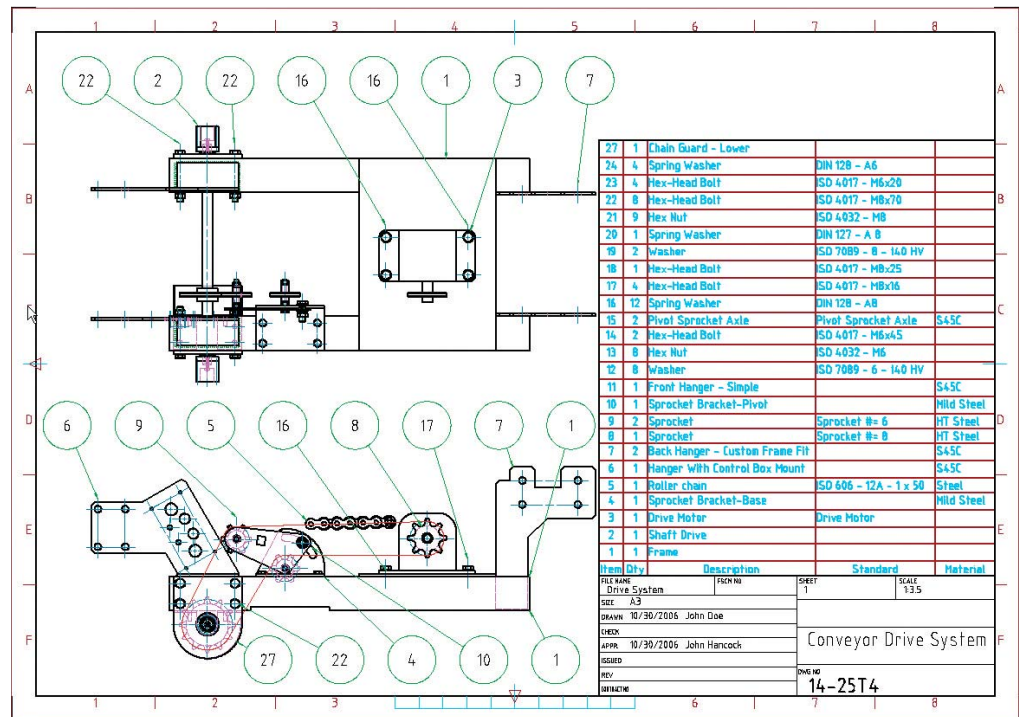


Technical What's New

Contents

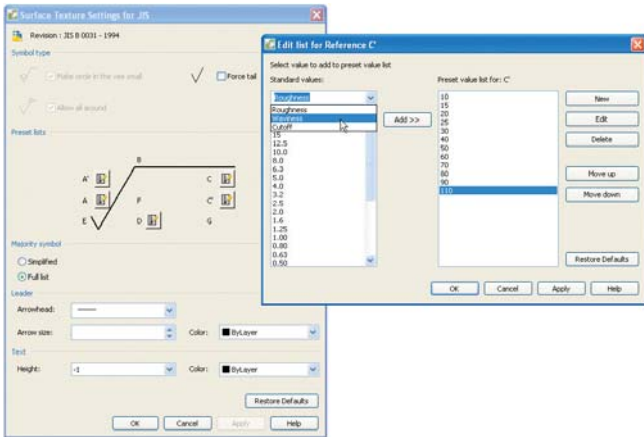
Proven Benefits	3
Reduce Complex or Repetitive Tasks	3
64-bit AutoCAD Mechanical.....	3
Mechanical Features Workshop.....	3
Workspaces.....	3
Increase Drafting Productivity	3
Symbols.....	3
Standard Parts Library.....	4
Power Dimensions.....	4
Section Lines.....	4
Communicate and Manage Design Data	4
Bill of Materials (BOM),	
Balloons and Parts Lists.....	4
Paper Space Annotation Views.....	5
Design Navigator and Single Grip.....	6
Application Programming Interface	
(API) Documentation.....	6
Stay Up to Date	7
Conclusion	7

AutoCAD® Mechanical software, a purpose-built design and drafting application, offers significant productivity gains over basic AutoCAD® software by simplifying mechanical design work. It provides standards-based libraries of parts for improving design accuracy and automates a variety of common tasks. Drafters can save countless hours of effort with associative detailing of Autodesk® Inventor™ models, and designers gain a competitive edge because they can spend their time innovating rather than managing workflow issues. AutoCAD Mechanical provides innovative design and drafting tools that provide immediate efficiency gains and ease of use for the AutoCAD user.



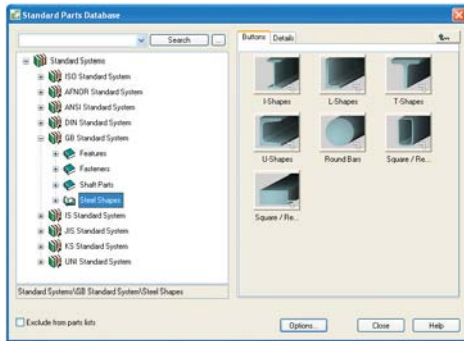
Technical What's New

Surface texture symbols now have customizable drop-down lists. You can have filtered lists. You can even filter lists with complex entries typical of specifying the surface texture parameter designation, numerical limit value, and transmission band as a single surface texture requirement. For example, the picture below shows the surface texture symbol with an expanded dialog for customizing the options.



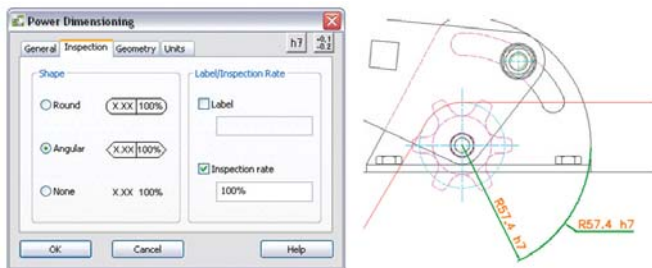
Standard Parts Library

More than 500 new steel shapes have been added to the standard parts library. The new additions comply with the 2005 revisions of the JIS and GB standards.

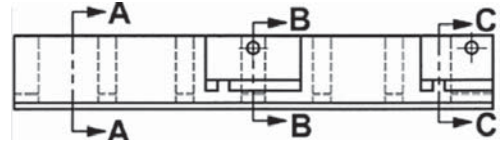


Power Dimensions

Radial and diametric dimensions created with the power dimension functions automatically create arc extension lines when placed beyond the extents of the arc. Furthermore, there is enhanced support for inspection dimensions. As with all other power dimensions; radial, diametric, and inspection dimensions are automatically compliant with international drafting standards like ANSI, DIN, GB, ISO, and JIS. They also automatically rearrange when a dimension is power-erased.



Section lines have been enhanced to support continuous naming. The default options for how plane lines should be drawn can now be configured in AMOPTIONS. This means that you can preconfigure the section line styles so when it is time to draw, you won't need to change the options each time you draw a new section line. Simply start placing section lines and the names will remember the last used name and use a new name.

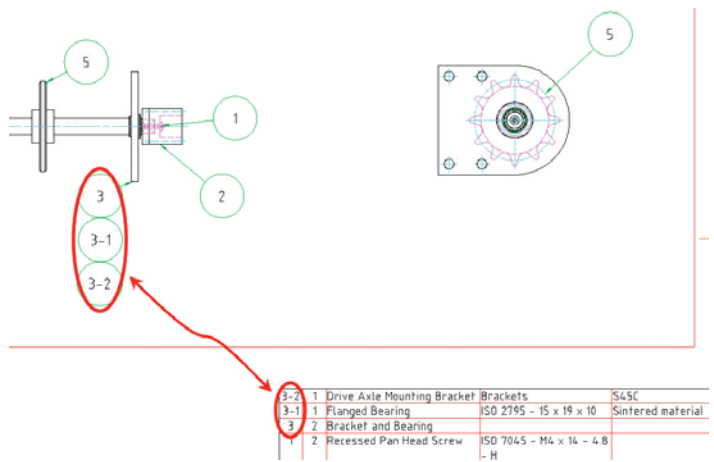


Communicate and Manage Design Data

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 steps 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.

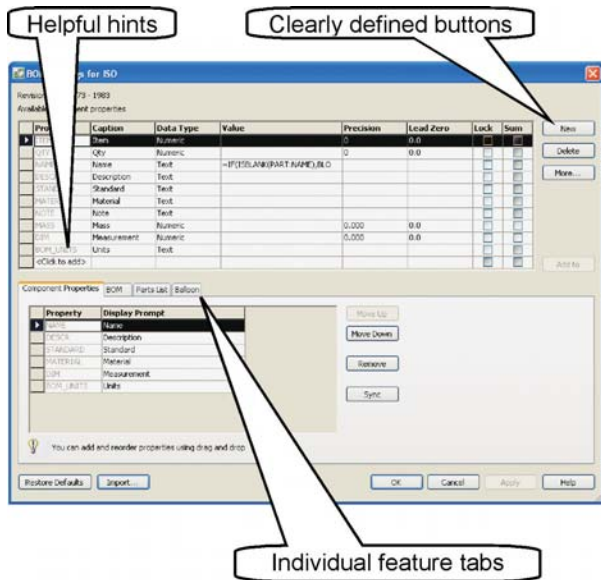
Bill of Materials (BOM), Balloons and Parts Lists

The new workflow for BOM configuration and management simplifies setup and customization, while maintaining the functionality for creating standards-based balloons and parts lists that automatically update as the design changes.

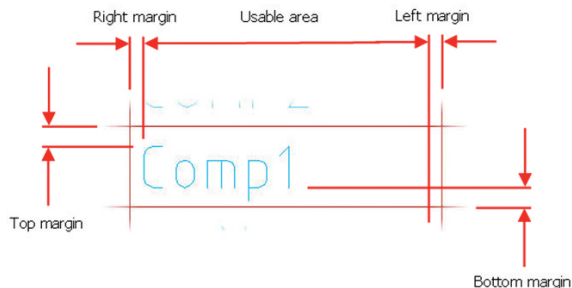


Technical What's New

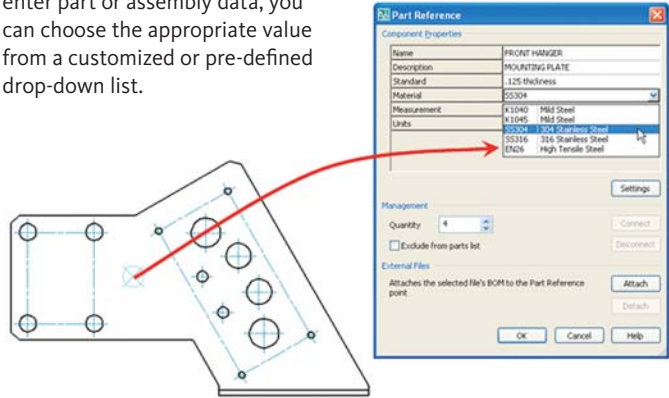
The entire user interface for BOMs, Balloons, and Parts Lists configuration has been revised to reduce the steps required to complete each task and customizable options are available so features can be revised to match current company practices. The dialog boxes are easy to use and maintain the familiar look and feel that has existed in past releases. A unified user interface for property mappings makes it easier to understand the existing mappings in a drawing. Since it is fully supported by drag-and-drop editing, data entry and the creation of mappings and parts lists for the BOM is now simplified.



Parts Lists now have enhanced text and margin control, allowing for independent control of heading and data rows separately. You can control the top, bottom, left, and right margins independently of each other. You also have more control over how column splitting can be performed.



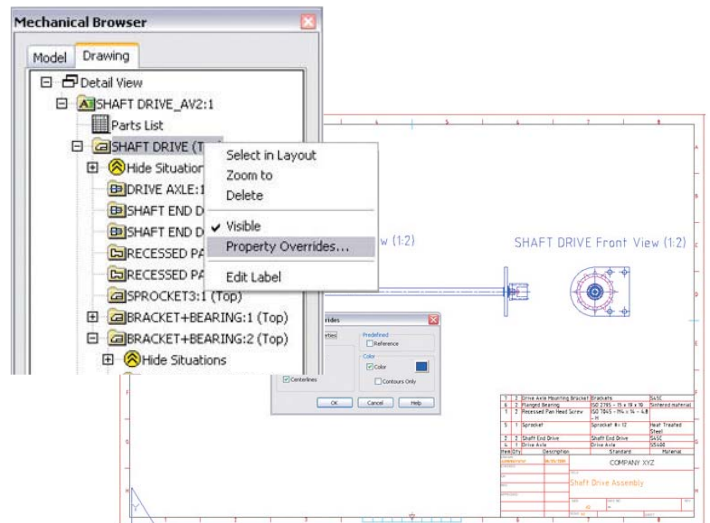
As with previous releases, you can directly enter formulas into the relevant BOM columns. If required, you can launch the new expression builder and create formulas easily in an assisted environment. Additionally, you can predefine lists, so that when you enter part or assembly data, you can choose the appropriate value from a customized or pre-defined drop-down list.



The BOM seamlessly integrates with Autodesk® Productstream® software. It can also be exported to MRP or ERP systems or simply edited in formats like a Microsoft® Excel® spreadsheet.

Paper Space Annotation Views

Annotation Views can now be placed directly in paper space layouts, without having to use AutoCAD view ports. Parts and assemblies from the model structure can be inserted as needed into paper space layouts, reducing the steps that are typically required to use viewports. When you add and remove parts and assemblies in the layout, the parts lists adjust to display an accurate count if you have added multiple versions of the same part. Property over-rides such as visibility and color which are possible in model space are now possible in paper space without changing the original model.



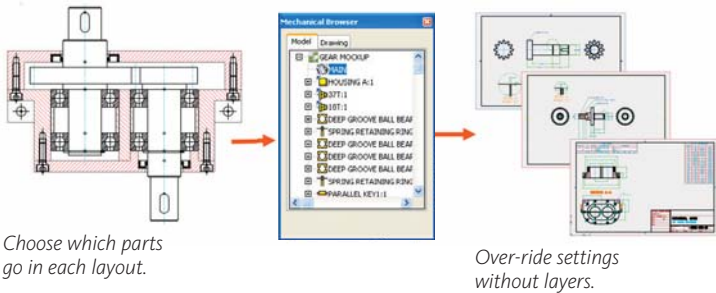
Technical What's New

For example, you can turn a particular view can be turned invisible in one layout and visible in another without affecting the model or the rest of the layouts. This creates a very efficient and simple workflow that has the following steps and advantages:

- Create only one model in model space
- Use the model views as parts, assemblies, or sub-assemblies on individual layouts
- Change the scale, visibility, and properties in layouts without affecting the model
- Parts lists accurately count the parts in each layout

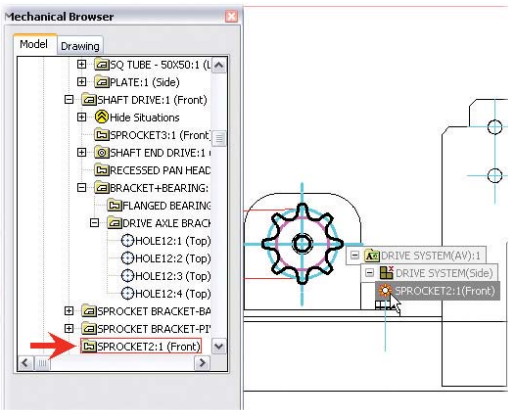
This reduces the need to create multiple copies of different parts of the drawing in model space. If one part of the design changes, all of the related layouts stay synchronized. And best of all, its easy for another designer to open this file and understand what has been designed.

Fully detailed annotation views can be externalized with their component definitions to a file for future reuse. To reuse the annotation views for other drawings, you can drag them into the model space and paper space conveniently from the structure catalog.

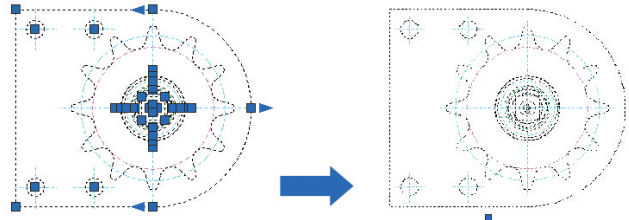


Design Navigator and Single Grip

Use the new Design Navigation mode to quickly identify the structure hierarchy of a part or assembly in model space so you can understand how your design fits together. This is helpful not only for the drafter or designer that creates the file, but also for anyone that reviews drawings or needs to understand them on the manufacturing shop floor.

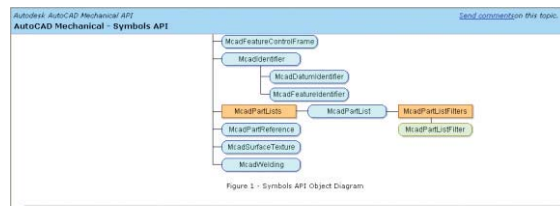


When you move the cursor over geometry in model space, cascading tooltips display the parent and children parts or assemblies that are included above or below the active part in the structure tree. Use the AMSNAVMODE command to turn these cascading tooltips on or off. Rollover highlighting is now able to provide a visual indication of the structure component you are going to select. It highlights the top-most assembly when in top-down mode and the lowest level of part when in bottom-up mode. When a selection is made, the selected structure component displays as a mechanical unit with a single grip point.



Application Programming Interface (API) Documentation

The API developer guide has been updated to provide information on symbols, balloons, parts lists, hide situations, and conversion of blocks to and from mechanical structure. Complete with hints and tips, the reference guide now includes all new and changed APIs.



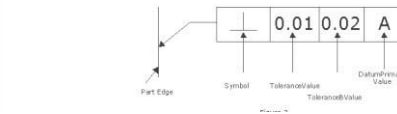
Example - Adding a Feature Control Frame Symbol

The following code will add a Feature Control Frame graphic symbol to the drawing. Once the custom object is added, we obtain a reference to the corresponding McaFeatureControlFrame object, with which we can set various properties of the symbol. Here, we set key values, including tolerance values. A single leader line is added from 10,10,0 to 11,11,0. Following the code is an example of a Feature Control Frame symbol with notation values set.

```

Dim symObj As McaFeatureControlFrame
Dim symObj = ThisDrawing.Application.GetInterfaceObject("SymFrame.McaFeatureControlFrame")
Dim posObj(0 To 3) As Double
posObj(0) = 100: posObj(1) = 110: posObj(2) = 00
posObj(3) = 110: posObj(4) = 110: posObj(5) = 00
Dim fcc As McaFeatureControlFrame
Set fcc = ThisDrawing.ModelSpace.AddCustomObject("AcadFCF")
fcc.IsDwg = 2
fcc.ParentIDValue = "PART ID Value"
fcc.SymbolIDValue = "A"
fcc.IsAllInOne = False
fcc.Symbol = 00: posObj(0) = 100: posObj(1) = 110: posObj(2) = 00
fcc.ToleranceValue = "0.02"
fcc.ToleranceValue = "0.01"
fcc.Addresses = posObj
fcc.LayerColor = 2
fcc.LayerColorType = "shadedOut"
Dim textObj

```



Technical What's New

Stay Up-to-Date

Autodesk gives you more. Gain access to technical expertise, utilize training and support programs direct from Autodesk, stay up to date with the latest product releases and give us your feedback. Not only does Autodesk want to help you use AutoCAD Mechanical more effectively but we want to make sure AutoCAD Mechanical is working effectively for you.

Subscription

Log into the Subscription Center to receive product updates, log and view support requests, or take eLearning courses. A valuable component of Autodesk® Subscription, eLearning provides a continually expanding curriculum of short training exercises.

Product Updates

If you experience an issue with AutoCAD Mechanical 2008 that has already been solved in a service pack or hotfix, a dialog box appears when you submit the problem to Autodesk, enabling you to immediately install the new service pack or hotfix.

Licensing

Cascading network licensing supports customers who need to deploy multiple Autodesk products. AutoCAD Mechanical 2008 licenses can easily be combined with licenses for Autodesk Inventor. As AutoCAD Mechanical licenses are used, the network first chooses the stand-alone AutoCAD Mechanical licenses, then the Autodesk Mechanical Desktop licenses, and finally the applicable Inventor licenses. The manufacturing offerings from Autodesk fit together to form a complete solution.

Feedback

AutoCAD Mechanical customers can provide feedback to the AutoCAD Mechanical development team through several different avenues. For example:

- Provide tips or join newsgroups at www.autodesk.com/autocadmechanical
- Keep up-to-date on what's happening in your industry, stay in touch with other industry professionals, and take advantage of a host of online resources at the Manufacturing Community Portal at www.mfgcommunity.autodesk.com
- Talk with your Autodesk Authorized Reseller and support staff

Your input is crucial to our success and we look forward to receiving your suggestions.

Conclusion

We thank you for your continued support of AutoCAD Mechanical and hope you feel we are listening to your needs. We added the new and enhanced functionality to AutoCAD Mechanical 2008 to help make you more productive, your company more competitive, and to return true value to your bottom line.

- 1 Designed by Autodesk and commissioned to an independent consultant, this study explores 10 common design challenges and shows direct comparisons of the time and effort required to accomplish each specific task in AutoCAD and AutoCAD Mechanical software. Read the complete study at www.autodesk.com/autocadmechanical-productivity