Autodesk Design Review 2012

# User's Guide

**Autodesk**

## Third-Party Software Credits and Attributions

This software is based in part on the works of the following:

Copyright © 1995-2005 The OpenSSL Project. All rights reserved.

Redistributions and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. All advertising materials mentioning features or use of this software must display the following acknowledgment: "This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (http://www.openssl.org/)"
4. The names "OpenSSL Toolkit" and "OpenSSL Project" must not be used to endorse or promote products derived from this software without prior written permission. For written permission, please contact openssl-core@openssl.org.
5. Products derived from this software may not be called "OpenSSL" nor may "OpenSSL" appear in their names without prior written permission of the OpenSSL Project.
6. Redistributions of any form whatsoever must retain the following acknowledgment: "This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (http://www.openssl.org/)"

THIS SOFTWARE IS PROVIDED BY THE OpenSSL PROJECT "AS IS" AND ANY EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE OpenSSL PROJECT OR ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.This product includes cryptographic software written by Eric Young (eay@cryptsoft.com). This product includes software written by Tim Hudson (tjh@cryptsoft.com).

Copyright © 1995-1998 Eric Young (eay@cryptsoft.com) All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

# Contents

x

# Getting Started

## About Design Review

Autodesk®Design Review is a free program used for creating and reviewing DWF files. An open, published, and secure file format developed by Autodesk, DWF enables you to combine and publish rich 2D- and 3D-design data and share it with others.

Design Review enables your entire project or product team to view, print, measure, and markup DWF, DWG, DXF, PDF and raster files containing 2D and 3D content. Fully integrated with AutoCAD®, Inventor®, and Revit®, Design Review helps you easily share drawings, models, maps, and design data with team members, clients, consultants, contractors, partners, suppliers, and other reviewers who may not own or know how to use design software.

You can share designs for use with Design Review by email, websites, intranets, and physical media, such as DVDs. Download Design Review for free (*http://www.autodesk.com/designreview-download*). You can redistribute it on your internal network or deploy it as part of your corporate PC image (as long as it is distributed in its entirety, per the terms of the license agreement).

### About DWF and DWFx

A DWF file can be used to organize sheet sets, models, animations, finite element analyses (FEA), and map information, as well as other project-related files, into a single, highly compressed file. Together with Design Review, DWF files help you enhance collaboration by clearly communicating information, such as design changes or corrections, all while reducing the printing and shipping costs associated with distributing paper copies to your extended team.

Much like Adobe® PDF files, DWF files are no more alterable than printed paper copies. Unlike PDF files, however, DWF files retain detailed design information and scale, and are therefore more suitable for architects, engineers, and designers.

The newest version of the DWF file format, DWFx, is based on the XML Paper Specification (XPS) from Microsoft. DWFx makes it easier to share design data with reviewers who cannot install software.

DWFx files can be opened and printed instantly using the free Microsoft XPS Viewer, which comes pre-installed on computers using the Microsoft Windows Vista® operating system. (For the Windows XP operating system, the Microsoft XPS Viewer can be downloaded directly from Microsoft.) Unlike DWF files, DWFx files include additional information to display design data in the Microsoft XPS Viewer. As such, DWFx files are larger than corresponding DWF files.

**TIP** In Design Review, you can choose between DWFx and DWF as the default file format on the General tab in the Options dialog box.

Currently, the Microsoft XPS Viewer does not support sheets containing 3D content, password-protected content, object properties, restricted content, or georeferenced map coordinates. In the Microsoft XPS Viewer, when attempting to view sheets DWFx files containing any of these unsupported features, a warning directs you to download and view the DWFx file in Design Review.

**NOTE** All references to DWF in this documentation implicitly include DWFx, unless specified.

### A Digital Design Workflow

Most DWF files begin as a drawing or model created in such Autodesk programs as AutoCAD, Inventor, and Revit. Before a DWF file is published, the person publishing the DWF file determines which features (model, layouts, layers, blocks, named views, and so on) are included in the published DWF file. Once the content has been determined, the designer publishes the file from its original format to a DWF file and sends the DWF file to the review team to begin the digital design review process.

■ **Receive.** Reviewers get the DWF file from the publisher and open it in Design Review to verify the content (a 2D drawing, 3D model, or image).

■ **Review.** Reviewers add digital comments and markup to the DWF file using callouts, text, shapes, dimensions, stamps, and custom symbols, saving changes to the DWF file.

- **Return.** Reviewers send the marked-up DWF file back to the original publisher.
- **Revise.** The designer uses the publishing software to import the marked-up DWF file, referring to comments in context to revise the original design quickly.
- **Republish.** After revising the original content in the publishing software, the designer republishes an updated DWF file, a new sheet set, or model, to begin the digital design workflow again.

The digital workflow can be repeated indefinitely to support the iterative nature of the design and review process.

**Related Products**

 *Autodesk® Navisworks®* can help you produce data-rich DWF files.

**See also:**

Open Files (page 44)

Save DWF Files (page 212)

Select a Default File Format (page 246)

Get the Microsoft XPS Viewer for Windows XP (page ?)

# What's New in Design Review 2012?

The following features have been added or enhanced in this release.

1 **Auto Recovery.** You can now recover your work (page 255) if Design Review closes unexpectedly.

2 **Enhanced custom workspace management.** Custom workspaces (page 38) now retain more view settings, markup formatting settings, as well as changes made to the ribbon and **Quick Access Toolbar**. You can also share your custom workspaces with your team and clients.

3 **Paste image onto a 2D sheet.** You can now copy an image to the Windows clipboard and paste it (page 156) directly onto a 2D sheet, making it easier to include images as markups and in symbol catalogs.

4 **Create symbol catalogs from selected objects.** Select any objects on the canvas, including pasted images, and turn them into a new custom symbol catalog (page 173).

5 **More custom symbol catalog management options.** Besides just deleting catalogs, Design Review now enables you to rename, import, and export custom symbol catalogs (page 176) too so they can be shared with your team and clients.

6 **Share your Design Review settings.** You have complete control over your Design Review options. You can now export and import Options (page 256) and application button settings.

7 **Additional scaling options when printing.** In previous versions of Design Review, when printing a sheet you could only scale it as a percentage relative to the published sheet size. New to this release, you can choose real-world scaling values or enter your own custom scale (page ?).

8 **Set a custom scale for any DWF sheet.** You can now change the scale (page ?) of a drawing, even if the scale was set by the authoring application.

9 **One-click access to useful resources.** Use the Resources tab (page 15) to view resources on the Web related to Design Review, such as the discussion group, videos, and blog.

# Get Help with Design Review

The Help file contains information about Design Review features. You can locate content in the Help window using the tabs.

■ **Contents.** Organized as a table of contents in a book.

■ **Index.** Organized as an index in a book.

■ **Search.** Allows you to search the help file electronically.

■ **Favorites.** Allows you to keep a list of any help topics you want to review again.

At the top of each Help page are hyperlinks called breadcrumbs that indicate the current location in the Help file. At the bottom of each Help page, you can use the "Please send us your comment about this page" to provide feedback regarding the Help file content.

**To open the Help window**

■ Click **Home** tab ➤ **Assistance** panel ➤ **Help**.

**TIP** You can also press F1 to open the Design Review2012 Help file.

■ Right-click the canvas or SteeringWheel and choose **Help**.

**To perform a basic search in the Help file**

1 Click the **Search** tab.

2 In the text box, type the word or phrase you want to find.

3 Click **List Topics**.

   **NOTE** The returned search results are affected by the three options below the Select topic list: Search Previous Results, Match Similar Words, Search Titles only.

4 Select a topic from the list and click **Display**.

   The selected topic displays in the **Help** window with the search term highlighted.

5 If necessary, use the vertical scroll bar to scan the topic for the highlighted term.

**To perform an advanced search**

■ Type two or more words joined by AND to find all topics with both words in it. For example, "markup AND measure" finds all topics with both words "markup" and "measure", but not topics with only one of the search words.

■ Type two or more words joined by OR when you want to find all topics with at least one of the words in it. For example, "markup OR measure" finds all topics with either the word "markup" or "measure".

■ Enter two or more words joined by NEAR when you want to find all the topics with these words near each other. For example, "markup NEAR measure" finds all the topics that contain the word "markup" near the word "measure".

■ Type two or more words joined by NOT to find all topics containing the first word but not the subsequent words. For example, "markup NOT measure" finds all topics that contain the word "markup", but not "measure".

If you combine operators (AND, OR, NEAR, and NOT), the operations are performed from left to right. Therefore, if you search for "markup OR measure AND text NOT stamp," topics that contain either "markup" or "measure" or both words are found, but they must also contain the word "text" and exclude the word "stamp".

**To select an operator (AND, OR, NEAR, NOT)**

■ Click the search text box arrow  and select an operator from the drop-down list.

**To add a topic to the Favorites tab**

1 Browse to the desired topic.
2 Click the **Favorites** tab.
3 Click **Add**.

**See also:**

NO LABEL

Learning Resources (page 276)

# Join the Customer Involvement Program

You are invited to help guide the direction of Autodesk design software.

If you participate in the Customer Involvement Program (CIP), specific information about how you use Design Review is forwarded to Autodesk. This information includes what features you use the most, problems that you encounter, and other information helpful to the future direction of the product.

See the following links for more information.

■ Learn more about the Autodesk Customer Involvement Program: *http://www.autodesk.com/cip*

■ Read the Autodesk Privacy Statement: *http://www.autodesk.com/cipprivacy*

When you join, you will be able to view reports that can help you optimize your use of Design Review.

**To turn the CIP on or off**

1 Click **Home** tab ➤ **Assistance** panel ➤ **Help** drop-down ➤ **Customer Involvement Program**.
   The **Customer Involvement Program** dialog box opens.
2 Select a level of participation.

**3**  Click **OK**.

# System Requirements

View the current system requirements for Design Review online:
*http://www.autodesk.com/designreview-systemrequirements-2012*

# Tour Design Review

<div style="text-align: right; font-size: 4em; font-weight: bold;">2</div>

## About the Application Window

The application window displays tools such as the application button, the **Quick Access** toolbar, the ribbon, and palettes. Design Review provides tools for you to view, mark up, print, and save DWF files to share with others or to return to the publisher of the original DWF for revision. Any changes you make

to the application window are preserved and available the next time you start Design Review.
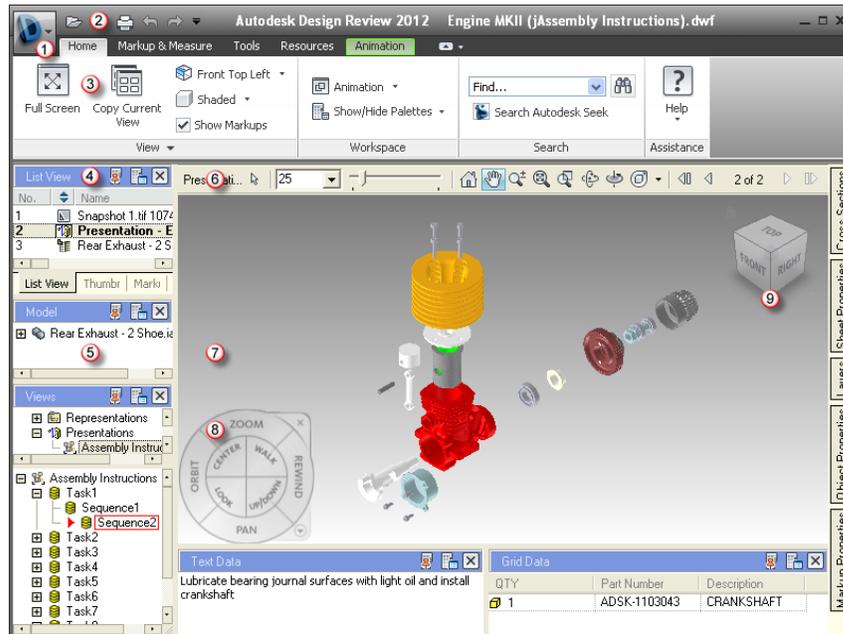


| | | | | | |
|---|---|---|---|---|---|
| **1** | Application button | **4** | Palette title bar | **7** | Canvas |
| **2** | **Quick Access** toolbar | **5** | Palettes | **8** | SteeringW |
| **3** | Ribbon | **6** | Canvas toolbar | **9** | ViewCube |

**Keytips**

Design Review provides accelerator keys, or keytips, to enable you to use the keyboard, rather than the mouse, to interact with the application window. Keytips are provided for the application menu, **Quick Access** toolbar, and ribbon. To display keytips, press Alt. The keytips (letters or numbers) are shown on the screen next to the corresponding command or user interface element. Press the appropriate keytip keys to invoke the desired command or to show the user interface element. To hide the keytips, press Alt again.

**Progressive Tooltips**

Placing the mouse pointer over a menu choice or a button shows a tooltip containing the name of the tool and a keyboard shortcut (if applicable). Some tooltips on the application menu, **Quick Access** toolbar, and ribbon are progressive. In addition to the tool name and keyboard shortcut, a brief description of the command is also provided. If the mouse pointer remains over the menu choice or button, the tooltip may expand to show additional information.

**See also:**

Alternative Methods for Performing Commands (page 261)

System Requirements (page 7)

Check for Design Review Updates (page 258)

# About the Application Button

At the top, left corner of the application window, the application button provides access to the application menu.



**The application button**

The application menu enables you to access common tools. Some application menu choices have additional menus that show related commands. Application

menu choices include: **New**, **Open**, **Save**, **Save As**, **Security**, **Print**, **Send Email**, and **Close**.
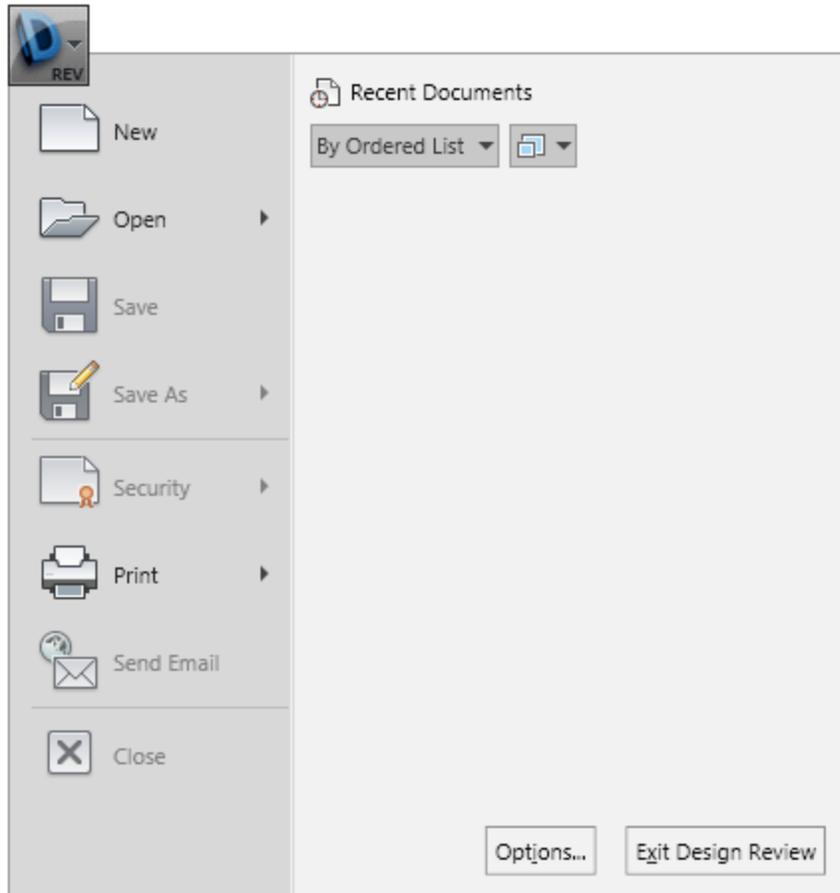


**The application menu**

In many locations in the Design Review window, you can access context-sensitive tools using the right-click menu. Depending on the content shown and the location of the mouse pointer when you right-click, the available tools vary.

**Recent Documents List**

View the most recently used files with the **Recent Documents** list. Files display in the **Recent Documents** list with the most recently used file at the top by default.

**Pinned Files**

You can keep a file listed regardless of files that you save later using the push pin button to the right. The file is displayed at the bottom of the list until you turn off the push pin button.

**Sort and Group Files**

At the top of the **Recent Documents** list, use the drop-down list to sort or group files:

■  By Ordered List

■  By Access Date

■  By Size

■  By Type

To the right of the sort options, you can use the other drop-down list to show **Icons**, **Small Images**, **Medium Images**, or **Large Images** to the left of files in the list.

**Preview Documents**

Also in the **Recent Documents** list, place the mouse pointer over a file to preview the file and show information about the file:

■  File Location

■  Date Modified

■  Version Info (specifically, the DWF file format version)

■  Currently Open By

# Use the Quick Access Toolbar

At the top of the application window, the **Quick Access** toolbar displays frequently used tools.

**The Quick Access toolbar**

Add unlimited tools to the **Quick Access** toolbar. Tools that extend past the

maximum length of the toolbar are displayed in a drop-down button.

**To add a ribbon button to the Quick Access toolbar**

1 Display the tab and panel that contains the button you want to add to the **Quick Access** toolbar.

2 Right-click the button on the ribbon and select **Add to Quick Access Toolbar**.

**To remove a ribbon button from the Quick Access toolbar**

■ Right-click the button on the **Quick Access** toolbar and select **Remove from Quick Access Toolbar**.

**To undo an action on the canvas**

■ On the **Quick Access** toolbar, click **Undo**.

If the action was several steps back, repeat this command as needed.

**To redo an action on the canvas**

■ On the **Quick Access** toolbar, click **Redo**.

---

**WARNING** Clicking **Undo** or **Redo** on the **Quick Access** toolbar does not affect changes to the Design Review window. The buttons only affect changes to content on the canvas.

---

# Use the Ribbon

The ribbon is the horizontal area of the application window that contains task-based tabs and panels with tools for viewing, marking up, and sharing DWF files.

## Ribbon Tabs and Panels

The ribbon is composed of a series of tabs. Each tab contains a series of panels organized by task.
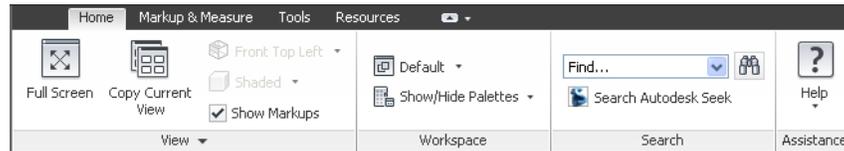


**The Home tab**
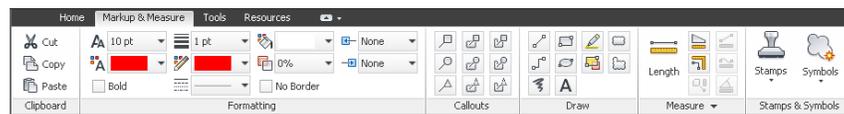


**The Markup & Measure tab**
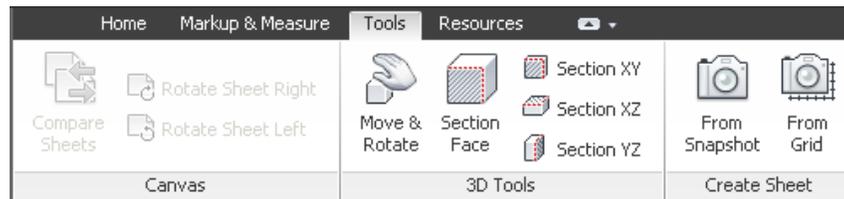


**The Tools tab**
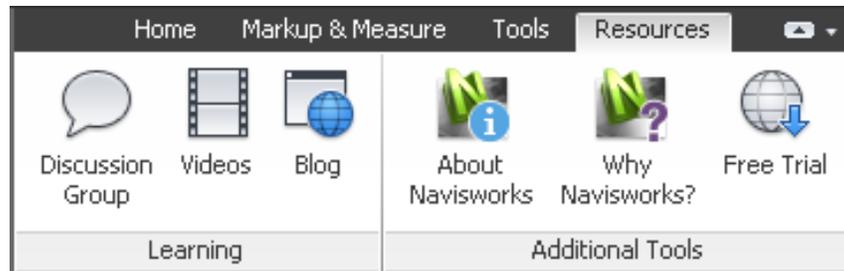


**The Resources tab**

## Contextual Tabs and Panels

Design Review contains one contextual tab and one contextual panel. By default, the Animation tab is hidden. However, when a sheet containing an animation is shown on the canvas, this context causes the Animation tab to

be shown. The Animation tab provides access to tools used to control how an animation is played.
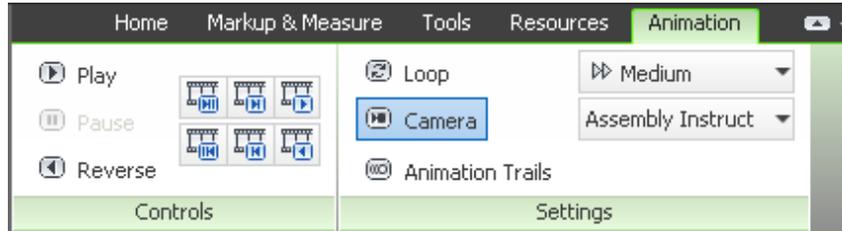


**The Animation tab is shown only when viewing an animation**

Like the Animation tab, by default, the File panel is hidden by default. When a Design Review file is embedded, this context causes the File panel to be shown on the Home tab. The File panel provides access to tools typically available on the application button and **Quick Access** toolbar, which are unavailable in embedded mode. You can also show the File panel manually.
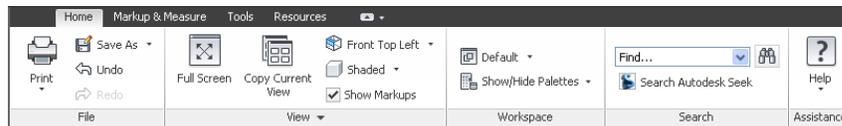


**The File panel is shown on the Home tab only when viewing an embedded DWF file**

### Slideout Panels

In the middle of a panel to the right of a title, an arrow icon, ▼ , indicates that the panel can slide out to display additional tools and controls. Click the title bar of an open panel to display the slideout panel. By default, a slideout panel automatically closes when you click another panel. To keep a panel expanded, click the push pin icon, ⊣⬚ , in the bottom-left corner of the slideout panel.

**To hide or show a ribbon tab**

■  Right-click a ribbon tab, click **Tabs**, and select the desired tab name.

**To hide or show a ribbon panel**

  **1**  Click the ribbon tab that contains the panels you want to hide or show.
  **2**  Right-click the ribbon tab, click **Panels**, and select the desired panel.

**To show or hide ribbon panel titles**

■ Right-click a ribbon tab and select **Show Panel Titles**.

**To restore the ribbon**

1 Right-click a ribbon tab and select **Restore Ribbon**.

The **Restore Ribbon** dialog box opens.

2 Click **Yes**.

**To use full-screen mode**

1 On the canvas, display the sheet or model you want to view full screen.

2 Click **Home** tab ➤ **View** panel ➤ **Full Screen**.

3 Optional: Manipulate the view using the **ViewCube** or by right-clicking the canvas and selecting the desired commands.

4 When finished viewing the content in full-screen mode, right-click and select **Full Screen**.

The program window, ribbon, toolbars, and palettes are shown in their previous locations.

**TIP** Pressing **N** is a quick way to control what is shown on the screen. Press **N** once to hide palettes. Press **N** again to hide ribbon and Canvas toolbar, showing the current sheet full screen. Press **N** again to show all items.

**See also:**

# Use the Canvas Toolbar

The Canvas toolbar is located above the upper, right corner of the canvas, providing easy access to some common selection, view, and navigation tools for working in an open file. When you place the mouse pointer over a button,

a tooltip displays. If a button has a small black arrow to the right, clicking the arrow shows buttons for related commands.

**Canvas toolbar**

By default, Design Review enables the Pan (page 57) tool 🖐 for 2D DWF files and the Orbit (page 69) tool ⟳ for 3D DWF files. When a DWF file has multiple sheets, the arrow buttons on the Canvas toolbar enable you to navigate quickly through them.

Depending on the open DWF file and the sheet displayed on the canvas, the Canvas toolbar may show additional icons: one icon to indicate whether or not the DWF file has been digitally signed 📄 and another icon to indicate if the sheet contains disablements (page 44). 📄

To affect any item in Design Review, you must first select it.

**To select an item**

1 On the **Canvas toolbar**, click **Select**.
2 Click the item you want to select.

**To select multiple items**

1 On the **Canvas toolbar**, click **Select**.
2 Click the items you want to select.
   ■ To select consecutive items in a palette, press and hold **Shift**, click the first and then the last item in a range, and release **Shift**. The two clicked items and all in between are selected.

   ■ To select non-consecutive items in a palette or on the canvas, press and hold **Ctrl**, click the items you want to add to the selection and release **Ctrl**. Ctrl-click any of the selected items to remove that item from the selection.

   ■ To select multiple 2D markup objects, on the canvas, click and drag the **Select** tool around the items you want to select.

- To exclude some 3D published objects from a selection, select the items you do not want to be part of a larger selection. Then right-click and select **Invert Selection**. The previously selected items are excluded from the selection.

When more tools are available on a toolbar than are shown, the More button is displayed ≫ at the end of a toolbar.

**To show hidden toolbar buttons**

1 At the end of a toolbar, click the **More** button ≫ to open a drop-down list of hidden buttons.

2 Click the desired button.

The Map toolbar cannot be hidden while a map is on the canvas, nor can it be displayed when no map is displayed. The Canvas toolbar cannot be hidden.

**About Contextual Toolbars**

The **Quick Access** and **Canvas** toolbars are available most of the time in Design Review. However, some toolbars are displayed depending on the content shown on the canvas. These toolbars are contextual. The Grid Data, and Map toolbars are contextual toolbars.

Much like the sheet navigation tools on the Canvas toolbar, the Grid Data toolbar includes tools for navigating between sheets of tabular data, such as a parts list.



**Grid Data palette toolbar**

The Map toolbar contains tools for viewing *georeferenced maps (page 283)* . The tools on the Map toolbar are accessible only when a georeferenced map is shown on the canvas.



**Map toolbar**

# Use Palettes

## Manipulate Palettes

A palette is a group of related features that enables you to find and display information about content in a DWF file. There are several palettes:

- **Thumbnails** and **List View** palettes. These two palettes show the 2D and 3D sheets, tables, and other sheets contained in the open DWF file. Clicking a sheet in either palette to display the contents on the canvas.

- **Sheet Properties**, **Markup Properties**, and **Object Properties**. For the selected content, these three palettes show sheet, markup, and *object (page 284)* properties.

- **Markups.** Lists all markups in the DWF file organized by sheet. Clicking a markup displays it on the canvas and displays the **Markup Properties** view in the **Properties** palette.

- **Model.** For 3D models, it lists the objects and subobjects in a 3D model. Clicking an object or subobject highlights it on the canvas.

- **Views.** Lists views created in Design Review, and views created in AutoCAD®, Inventor®, and Revit®.

- **Cross Sections.** For 3D models, it lists cross sections. A cross section is a section made by cutting a model at an angle, usually to show an interior view. In the **Cross Sections** palette, right-clicking a cross section enables you to perform various functions, such as flip the cross section, hide the section plane, deactivate the cross section, and so on.

- **Layers.** For 2D sheets, it lists all *layers (page 283)* for each sheet. Right-clicking a layer enables you to turn the layer on and off.

- **Text Data.** Displays textual data, such as assembly instructions, included with published animations in a 3D DWF file.

- **Grid Data.** Displays any tabular data, such as a parts list or Bill of Materials, included in a DWF file.

- **Find.** Quickly locate text in an open DWF file by searching tabular data, markups, objects, sheet names, and properties.

---

**WARNING** Clicking the **Undo** and **Redo** buttons on the **Quick Access** toolbar do not affect changes to the Design Review window. The buttons only affect changes to content on the canvas.

---

**About Palette Positions**

In Design Review, the palettes can be manipulated to facilitate your design review sessions. Palettes can be docked (pinned and unpinned), undocked, and grouped.

A docked palette is one that is attached to the program window and is constantly available in a workspace. Palettes can be docked in the docking areas above or below and to the left or right of the canvas. In the docking areas to the left and right of the canvas, palettes can be stacked vertically and, in the docking areas above or below the canvas, palettes can be positioned side by side.

**Stacked palettes**
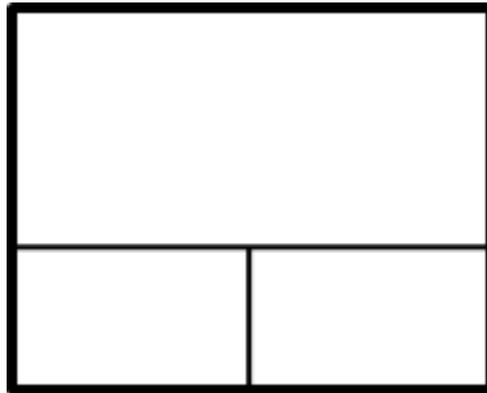
**Side-by-side palettes**

By default, a docked palette is pinned, meaning that the palette remains displayed at its current size and can be moved. When you unpin a palette and

move the mouse pointer away from it, the palette is reduced to a tab displaying the palette name. Moving the mouse pointer over the tab displays the palette fully, but temporarily, over the canvas. Unpinning a palette can show more of the canvas while still keeping the palette available. Unpinning a palette also prevents it from being undocked, grouped, or ungrouped.



**Palettes pinned**
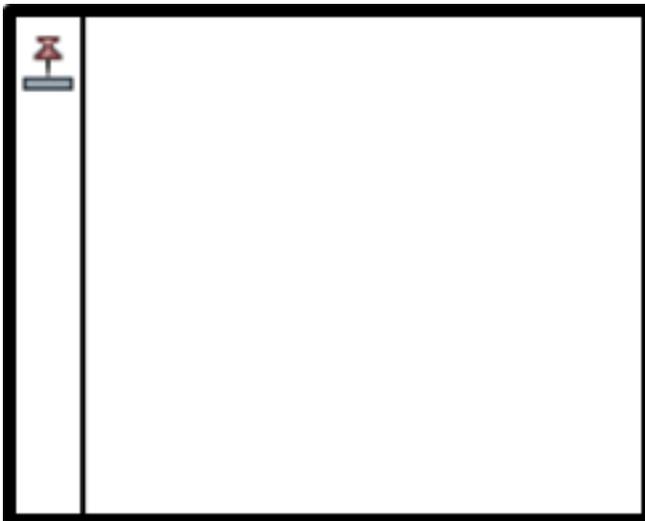


**Palettes unpinned**

An undocked palette is one that has been separated from the program window. Each undocked palette can be moved around the screen or screens as desired. Although undocked palettes cannot be pinned, they can be resized and grouped.

A palette group is a way to have more than one palette occupy the same amount of space on the screen. When palettes are grouped, each palette is represented by a tab at the bottom of the group. For example, the **Thumbnails** and **List View** palettes are grouped by default. In a group, click a tab to display that palette. You can group or ungroup palettes as necessary and save custom workspaces to facilitate your design review process. After changing palette positions, you can save your settings as a custom workspace (page 38).

---

**TIP**  In a pinned group, each palette can be resized separately from other palettes.

---

Above every palette is a palette title bar. The palette title bar enables you to control the location of the palette and how content is shown in the palette.



**A palette title bar**

■  The **Pinned**  and **Unpinned**  buttons control the position of the palette.

■  The **Palette Options** button  provides access to commands for manipulating palette content.

■  The **Close Palette** button  hides the palette.

**To hide or show a palette**

1  Click **Home** tab ➤ **Workspace** panel ➤ **Show/Hide Palettes** drop-down.

2  Select the desired palette.

**To undock a palette**

1  Click the title bar of a docked palette and drag the palette over the canvas.

   As you begin dragging, an outline of the palette is shown to indicate that the palette is undocked.

**2** Drop the palette to undock it.

**To dock a palette**

**1** Click the title bar of an undocked palette and drag it toward the side of the canvas where you would like it docked.

When the palette outline nears that location, the outline snaps to the side of the canvas to indicate that docking is allowed.

**2** Optional: Position the palette in relation to any other palettes.

**3** Drop the palette to dock it.

**To group palettes**

**1** Click and drag the title bar of the palette to be added to another palette or group.

**2** Drop the palette on the title bar of the receiving palette or group.

A tab, with the name of the dragged palette, is added to the bottom of the receiving palette. The palettes are grouped.

Click a tab to display the palette content.

**To ungroup palettes**

**1** Within the palette group, display the palette you want to remove.

**2** Click and drag the palette tab out of the group.

**3** Drop the palette to ungroup.

**To unpin a palette**

■ On a palette title bar, click the **Pinned** button. 

The palette becomes unpinned. The **Pinned** button changes to the

**Unpinned** button  and a tab with the name of the pinned palette is shown on the side of the canvas where the palette is docked. The palette continues to be displayed until you move the mouse pointer away from it. When you move the mouse pointer, the palette is collapsed until you place the mouse pointer over the palette tab. Repeat this step to pin the palette.

**To resize a palette**

**1** Place the mouse pointer over a palette border until the mouse pointer changes to vertical, double-headed arrow ↕ or a horizontal, double-headed arrow. ↔

**2** Click and drag the border to the desired size.

**To scroll within a palette**

■ If palette contents are too large to show completely, drag the vertical and/or horizontal scroll bars inside the palette.

**To resize a column within a palette**

**1** Place the mouse pointer over the line that separates column headings until the mouse pointer changes to a horizontal, double-headed arrow. ╪

**2** Drag the mouse pointer left or right to resize the column.

**To sort a palette column in ascending or descending order**

■ Click a column heading and the column sorts numerically or alphabetically. Click a column heading again to reverse the sort order.

**See also:**

General Tab (Options Dialog Box) (page 245)

# Thumbnails Palette

The **Thumbnails** palette shows icons representing 2D and 3D sheets, tables, and other sheets contained in the open DWF file.

**To hide or show the Thumbnails palette**

**1** Click **Home** tab ➤ **Workspace** panel ➤ **Show/Hide Palettes** drop-down.

**2** Click **Thumbnails**.

**To show a sheet on the canvas**

■ In the **Thumbnails** palette, click the sheet you want to view.

The sheet is shown on the canvas.

**NOTE** If the sheet in the **Thumbnails** palette contains tabular data, the information is shown in the **Grid Data** palette.

**To change the sheet view in the Thumbnails palette**

■ On the **Thumbnails** palette title bar, click the **Palette Options** button
and select a sheet view.

   ■ **Large Thumbnails.** Displays a larger graphical representation of the sheet and its contents.

   ■ **Small Thumbnails.** Displays a smaller graphical representation of the sheet and its contents.

**See also:**

Compose DWF Files (page 136)

Learning Resources: Alternative Methods for Performing Commands (page 261)

# List View Palette

The **List View** palette lists 2D and 3D sheets, tables, and other sheets contained in the open DWF file.

This information is shown in the **List View** palette.

■ The number of the sheet as published. The number indicates the sheet order in the DWF file.

■ An icon representing the type of sheet. You can sort the list by icon type by clicking the up or down arrows. The publisher may provide icons. If not, Design Review provides generic icons:

   ■ 2D drawing or image

   ■ 3D model

   ■ 3D part

- iAssembly
- iPart
- table
- presentation

- The name of the sheet. You can rename a sheet.
- The size of the sheet.
- A description, if the publisher of the sheet, model, or table has provided one.
- The type of content on the sheet. If the publisher has not defined the type, generic types such as Sheet, Model, or Table are displayed.

**To hide or show the List View palette**

1   Click **Home** tab ➤ **Workspace** panel ➤ **Show/Hide Palettes** drop-down.
2   Click **List View**.

**To show a sheet on the canvas**

- In the **List View** palette, click the sheet you want to view.

  The sheet is shown on the canvas.

  **NOTE** If the sheet in the **List View** palette contains tabular data, the information is shown in the **Grid Data** palette.

**See also:**

Compose DWF Files (page 136)

Rename a Sheet (page 142)

Learning Resources: Alternative Methods for Performing Commands (page 261)

# Sheet Properties Palette

The **Sheet Properties** palette shows properties for the selected sheet. These sheet properties are determined by the program that created the DWF file.

Sheet properties include may include author, creation time, description, modification time, sheet name, sheet size, and so on.

**To hide or show the Sheet Properties palette**

**1** Click **Home** tab ➤ **Workspace** panel ➤ **Show/Hide Palettes** drop-down.

**2** Click **Sheet Properties**.

**To view sheet properties**

■ On the canvas or in the **Sheet Properties** palette, select the sheet that contains the properties you want to view.

The properties for the selected sheet display in the **Sheet Properties** palette.

**See also:**

Search Autodesk Seek (page 55)

Use Palettes (page 20)

Select Items (page 17)

Learning Resources: Alternative Methods for Performing Commands (page 261)

# Markup Properties Palette

The **Markup Properties** palette shows properties for the selected markup. These markup properties may include label, reviewing status, locking status, notes, history, markup author, creation time, modification time, and sheet name where the markup resides.

**To hide or show the Markup Properties palette**

**1** Click **Home** tab ➤ **Workspace** panel ➤ **Show/Hide Palettes** drop-down.

**2** Click **Markup Properties**.

**To view markup properties**

■ On the canvas or in the **Markups** palette, select the markup that contains the properties you want to view.

The properties for the selected markup display in the **Markup Properties** palette.

**See also:**

# Object Properties Palette

The Object Properties palette shows properties for the selected published object. These object properties vary widely based on the DWF file publisher's requirements.

If published objects are nested (objects within objects), only the properties for the top-level object are shown in the palette.

**To hide or show the Object Properties palette**

1 Click **Home** tab ➤ **Workspace** panel ➤ **Show/Hide Palettes** drop-down.

2 Click **Object Properties**.

**To view object properties**

■ On the canvas or in the **Object Properties** palette, select the object that contains the properties you want to view.

The properties for the selected object display in the **Object Properties** palette.

**See also:**

# Markups Palette

The **Markups** palette lists all markups in the DWF file organized by sheet. Clicking a markup displays it on the canvas and displays the **Markup Properties** view in the **Properties** palette.

**To hide or show the Markups palette**

1   Click **Home** tab ➤ **Workspace** panel ➤ **Show/Hide Palettes** drop-down.

2   Click **Markups**.

**To display markup in the Markups palette**

1   With a DWF file open that contains markup, in the **Markups** palette, click the plus sign (+) next to the sheet that contains the markup.



2   Click the markup.
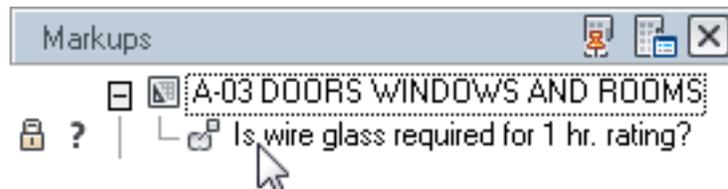


The sheet containing the markup is shown on the canvas, panned and zoomed to the position at which the markup was created.

**Markup Status**

On the **Markups** palette, the status of the markup is indicated by its icon. On the canvas, callout, custom symbol, and shape markup colors change to reflect the status.

| Icon | Status | Markup Color on Canvas |
|------|--------|------------------------|
| | **<None>** | No status color |
| | **For Review** | Blue |
| | **Question** | Green |
| | **Done** | Yellow |

**NOTE** Markup **Status** can be set or modified from the Properties palette (page 28).

The status color highlighting can be viewed and printed with the drawing. If you wish to view or print the drawing and markup without highlighting, you can turn the color highlighting off. To turn status color highlighting off, see Markup Settings (page 245).

**NOTE** RML files are markup files created in Volo View. They contain the markup alone without the drawing. Design Review does not read RML files.

**See also:**

Markup Basics (page 143)

Control Markup Display (page 145)

Change Markup Properties (page 158)

Learning Resources: Alternative Methods for Performing Commands (page 261)

# Model Palette

The **Model** palette contains a tree list of the *objects (page 284)* and subobjects of a 3D model. The objects and subobjects within the model are defined by the publisher of the DWF file.
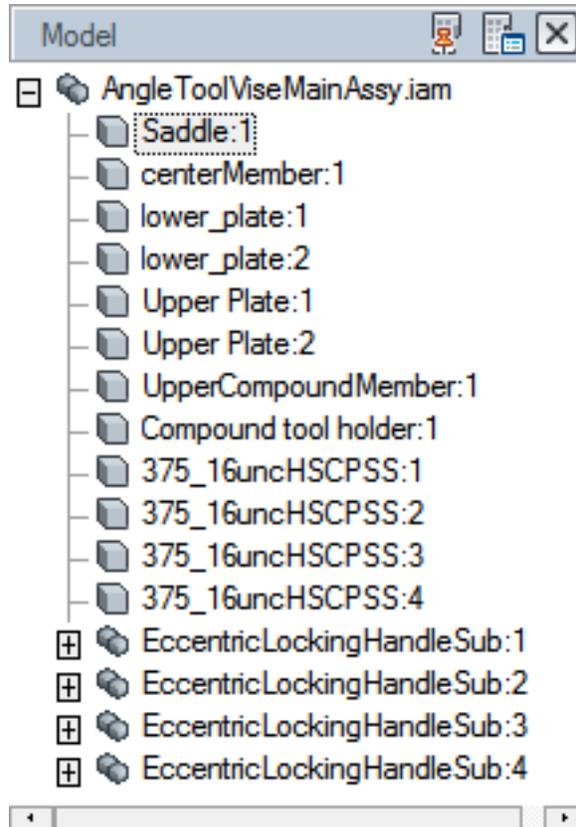


**To hide or show the Model palette**

1   Click **Home** tab ➤ **Workspace** panel ➤ **Show/Hide Palettes** drop-down.

2   Click **Model**.

**See also:**

About 3D DWF Files (page 63)

## Views Palette

The **Views** palette lists standard 2D and 3D views, views created in Design Review, and views created by AutoCAD®, Autodesk® Inventor®, and Revit® users. Publishing a particular view can help direct reviewers to the content to be reviewed.

Animations are loaded into Design Review automatically when the first sheet of the DWF file contains an animation.

The **Views** palette shows several types of views:

- **Standard Views**. Lists various 3D views such as front, back, top, bottom, and so on.

- **My Views**. Views created in Design Review saved as My View 1, My View 2, and so on. My Views can be renamed. Each sheet has its own set of My Views.

- **Named Views**. Views created by Autodesk products that publish named views.

- **Published Views**. Views and animations published from Inventor.

- **Bookmarks**. Views published from Revit.

**IMPORTANT** Saving to **My Views** retains display changes, such as cross sections, field of view, layers, lighting, and 3D object movements and rotations.

**To hide or show the Views palette**

1 Click **Home** tab ➤ **Workspace** panel ➤ **Show/Hide Palettes** drop-down.

2 Click **Views**.

**To save a view to My Views**

1 Arrange the items on the canvas and set the view the way you want it to be saved.

2 Click **Home** tab ➤ expand the **View** panel.

3 Click **Save View**.

The selected view is saved in the **Views** palette under **My Views** as **My View 1**. Additional views are saved as **My View 2**, **My View 3**, and so on. You can rename saved views as desired.

---

**TIP** You can also click **Save View** on the **Palette Options** drop-down list on the **Views** palette title bar.

---

**To rename a saved view**

1   In the **Views** palette, under **My Views**, right-click the saved view you want to rename and select **Rename**.

The **Rename View** dialog box opens.

2   In the **Type New Name** text box, type the new name.

3   Click **OK**.

The new name is applied to the saved view.

**To update an existing saved view**

1   If necessary, rearrange the items on the canvas and reposition the view the way you want it to be saved.

2   In the **Views** palette, under **My Views**, right-click the saved view you want to update and select **Save**. The new arrangement has been saved to the existing **My View**.

**To delete a saved view**

■   In the **Views** palette, under **My Views**, right-click saved view you want to delete and select **Delete**.

The saved view is deleted.

**TIP** You can also right-click a saved view and select **Reset to Published View** to return the sheet to the way it was originally published.

**To delete all saved views**

■   In the **Views** palette, right-click **My Views** and select **Delete My Views**.

All saved views are deleted.

**See also:**

Start an Animation (page 115)

Use Standard 3D Model Views (page 64)

## Cross Sections Palette

The **Cross Sections** palette lists the cross sections created by you or the publisher of the 3D model.

---

**IMPORTANT** Saving to **My Views** retains display changes, such as cross sections, field of view, layers, lighting, and 3D object movements and rotations.

---

**To hide all cross sections on the model**

■ In the **Cross Sections** palette, right-click **My Cross Sections** and select **Active**.

The check mark is removed from the **Active** command. The section plane and all cross sections are hidden. To display them again, right-click **My Cross Sections** in the **Cross Sections** palette and select **Active**.

**To manipulate a cross section from the Cross Sections palette**

■ Right-click the cross section you want to manipulate and select the desired command.

- ■ **Flip**. Flips the cross section.
- ■ **Hide**. Hides the section plane.
- ■ **Active**. Activates or deactivates the cross section.
- ■ **Viewpoint**. Displays the cross section parallel to the screen.
- ■ **Rename**. Changes the name of the cross section.
- ■ **Reset**. Returns a section plane to its original position.
- ■ **Delete**. Deletes a cross section.

**To hide or show the Cross Sections palette**

1  Click **Home** tab ➤ **Workspace** panel ➤ **Show/Hide Palettes** drop-down.
2  Click **Cross Sections**.

**To hide the section plane and a cross section temporarily**

■ In the **Cross Sections** palette, right-click the cross section you want to hide and select **Active**.

■ Click the light bulb next to the Cross Section you want to hide.

**See also:**

View Cross Sections of a 3D Model (page 101)
Control Caps Display (page 109)
Save Cross Section Changes as a My View (page ?)
Learning Resources: Alternative Methods for Performing Commands (page 261)

# Layers Palette

The **Layers** palette lists all layers on the currently displayed sheet. For example, a layer shows only plumbing and another layer showing electrical. **Layers** can be turned on and off, so that they can be viewed individually or all together. It is up to the DWF file publisher whether downstream consumers can turn layers on and off when viewing the DWF file in Design Review.

**IMPORTANT** Saving to **My Views** retains display changes, such as cross sections, field of view, layers, lighting, and 3D object movements and rotations.

**To hide or show the Layers palette**

1 Click **Home** tab ➤ **Workspace** panel ➤ **Show/Hide Palettes** drop-downdrop-down.

2 Click **Layers**.

**To hide layers**

1 In the **Layers** palette, select the layer or layers you want to affect.

2 Right-click the selection and select **Layer(s) Off**.

The selection is hidden.

**TIP** You can also click the light bulb to the left of the layer name to hide the selected layer or layers.

**To show layers**

**1** In the **Layers** palette, select the layer or layers you want to affect.

**2** Right-click the selection and select **Layer(s) On**.

The selection is shown.

**TIP** You can also click the darkened light bulb icon  to the left of the layer name to show the selected layer or layers.

**See also:**

Save Layer Changes as a My View (page ?)

Learning Resources: Alternative Methods for Performing Commands (page 261)

# Text Data Palette

The **Text Data** palette lists all textual data, such as assembly instructions.

**To hide or show the Text Data palette**

**1** Click **Home** tab ➤ **Workspace** panel ➤ **Show/Hide Palettes** drop-down.

**2** Click **Text Data**.

**See also:**

About Tabular Data (page 123)

# Grid Data Palette

The **Grid Data** palette shows all detail associated with a selection, such as part details.

**To hide or show the Grid Data palette**

**1** Click **Home** tab ➤ **Workspace** panel ➤ **Show/Hide Palettes** drop-down.

**2** Click **Grid Data**.

**See also:**

About Tabular Data (page 123)

## Find Palette

The **Find** palette enables you to locate text quickly in an open DWF file by searching for tabular data, markups, text on 2D sheets, objects, sheet names, and their properties. Found results are shown in a convenient list, enabling you to click a result to display the found text or associated object on the canvas or in a palette.

**To hide or show the Find palette**

1   Click **Home** tab ➤ **Workspace** panel ➤ **Show/Hide Palettes** drop-down.
2   Click **Find**.

**See also:**

Find Text in an Open DWF File (page 53)

# Use Workspaces

Workspaces retain information about Design Review user interface settings.

■ Open palettes

■ Palette positions

■ Application window size

■ Ribbon and **Quick Access** toolbar changes

■ Markup formatting settings

Workspaces also retain information about certain custom **View** settings.

■ **Show Markups**

■ **Drop Shadows**

■ **Color**

■ **Always Show Markups in Color**

■ **Coordinate Systems**

- **Show ViewCube**
- **Show Hyperlinks**
- **Show Canvas Background**
- **Snap to Geometry**

---

**NOTE** Workspaces do not retain certain settings unique to 3D DWF files such as viewpoint, perspective, lighting settings and so on.

---

Design Review has two predefined workspaces with palettes arranged to help facilitate various review workflows: **Default** and **Animation**.
**Default**
- **List View**, **Thumbnails**, **Markups**, and **Model** palettes in a tabbed group.
- **Markup Properties**
- Other palettes are displayed as tabs to the right of the canvas.

**Animation**
- **List View**, **Thumbnails**, and **Markups** palettes in a tabbed group.
- **Model**
- **Views**
- **Text Data**
- **Grid Data**
- Other palettes are displayed as tabs to the right of the canvas.

---

**NOTE** When you select a predefined workspace, the application window resizes to size stored in the workspace. Predefined workspaces use a maximized window. To retain a different application window size, resize the window to the desired dimensions and create a custom workspace.

---

In addition to the predefined workspaces, you can also create your own custom workspaces to arrange Design Review the way you want it. Once you have created your custom workspaces, you can share them with team members and clients as an XML workspace file.

**To select a predefined workspace**

1 Click **Home** tab ➤ **Workspace** panel ➤ **Workspace** drop-down.
2 Select the desired workspace.

**To create a custom workspace**

1 Arrange the palettes so they are positioned how you want them to be saved.

2 Click **Home** tab ➤ **Workspace** panel ➤ **Workspace** drop-down.

3 Select **Save Current Workspace**.

The **Save Workspace As** dialog box opens.

4 In the **Enter Workspace Name** text box, type the name of the custom workspace.

5 Click **OK**.

The custom workspace is saved and listed above the predefined workspaces. Custom workspaces are listed in the order they were created.

**TIP** To modify a custom workspace, make the desired changes and save it again with the same workspace name.

**To rename a custom workspace**

1 Click **Home** tab ➤ **Workspace** panel ➤ **Workspace** drop-down.

2 Select **Manage Workspaces**.

The **Manage Workspaces** dialog box opens.

3 From the **Current Custom Workspaces** list, select the workspace you want to rename.

4 Click **Rename**.

The workspace name is selected.

5 Type the name of the workspace and press **Enter**.

The workspace is renamed.

6 Click **Close**.

**To delete a custom workspace**

1 Click **Home** tab ➤ **Workspace** panel ➤ **Workspace** drop-down.

2 Select **Manage Workspaces**.

The **Manage Workspaces** dialog box opens.

3 From the **Current Custom Workspaces** list, select each workspace you want to delete.

4 Click **Delete**.

The **Delete** dialog box opens.

**5** Click **OK**.

The selected workspaces are deleted and removed from the workspaces list.

**6** Click **Close**.

**To export a custom workspace**

**1** Click **Home** tab ➤ **Workspace** panel ➤ **Workspace** drop-down.

**2** Select **Manage Workspaces**.

The **Manage Workspaces** dialog box opens.

**3** From the **Current Custom Workspaces** list, select the workspace you want to share.

**4** Click **Export**.

The **Export Workspace** dialog box opens.

**5** Optional: Navigate to the location where you want to store the workspace file.

**6** Optional: In the **File Name** text box, type the name of the workspace file.

**7** Click **Save**.

A copy of the custom workspace is exported and ready to be shared.

**8** Optional: Export another custom workspace.

**9** Click **Close**.

**To import a custom workspace**

**1** Click **Home** tab ➤ **Workspace** panel ➤ **Workspace** drop-down.

**2** Select **Manage Workspaces**.

The **Manage Workspaces** dialog box opens.

**3** Click **Import**.

The **Import Workspace** dialog box opens.

**4** If necessary, navigate to the location where the workspace file is stored.

**5** Select the workspace you want to import.

**6** Click **Open**.

A copy of the custom workspace is imported and added to the **Current Custom Workspaces** list and ready to be used.

**7** Optional: Import another custom workspace.

**8** Click **Close**.

**See also:**

# Using Design Review

# 3

# Receive DWF Files

## About Receiving DWF Files

You can receive DWF files several ways.

- As an email attachment
- From a shared folder on a company network
- From an Autodesk® Buzzsaw® or Autodesk® Streamline® project folder
- From an FTP server
- From a disk, memory card, or other device
- Embedded in a web page or other file type

---

**NOTE** Some DWF files you receive can contain sheets or models that have been markup-, measure-, or print-disabled.

---

**Compatibility with Earlier Versions of Design Review**

In Design Review 2012, you can open any version of DWF. You can also modify all markups created in earlier versions of Design Review. When you alter markup created by an older version of Design Review and save the DWF file, a warning dialog box opens. To save the DWF file changes in the newer DWF version, click **OK**. To retain the original DWF file version but discard any changes, click **Cancel**.

Earlier versions of Design Review (DWF Composer 1.0, 2.0, and Design Review 2007-2011) can view, but not modify, some markups from later versions of

Design Review. For example, in DWF Composer 1.0, you can view custom symbols, but not select or move them. If earlier versions of Design Review are unable to access certain features, download the latest version. In general, if you are having difficulty viewing DWF files, verify that you have the most current software by clicking **Home** tab ➤ **Assistance** panel ➤ **Help** drop-down ➤ **Check for Updates**.

**See also:**

# Open Files

## About Disabled DWF Files

Design Review enforces disabled DWF files published by Autodesk® Inventor. From Autodesk® Inventor® R11 DWF Extension (available to subscription customers) or later, you can prevent recipients from measuring some or all sheets or models in their published DWF files. In addition to disabling measurement, if you are using Autodesk® Inventor® 2008 or later, you can also disable markup and printing capabilities for some or all sheets or models when publishing DWF files.

When you open a DWF file that contains disabled sheets, a dialog box opens listing all the disabled sheets and the restrictions for each. (You can prevent this dialog box from opening by checking the **Don't Show Me This Message Again** check box, or uncheck the **Warn When Viewing a Document with Restrictions** check box on the **General** tab in the **Options** dialog box.)

---

**IMPORTANT**   Design Review neither creates disabled DWF files, nor does it allow you to disable existing DWF files. Disabled DWF files are created by Inventor before the DWF file is published. Design Review simply enforces the DWF file disablements published by Inventor.

---

When a markup-, measure-, or print-disabled sheet is shown on the canvas, some related tools are disabled. Depending on the disablements, an icon  is shown on the Canvas toolbar and in the **Restrictions** column of the **List**

**View** palette, indicating that portions of the DWF file contain disabled features.

Placing the mouse pointer over the icon shows all restrictions applied to the content on that sheet. Also, DWF files that contains markup-, measure-, or print-disabled sheets retain their disablements in embedded mode. Furthermore, when disabled sheets are copied or moved to another DWF file, or are saved as a new DWF file, the disablements are retained.

If you have a problem opening a disabled sheet, verify that you have the latest version of Design Review and contact the publisher of the DWF file.

**See also:**

About Composing DWF Files (page 136)

About Markup-Disabled DWF Files (page 144)

About Measure-Disabled DWF Files (page 183)

About Print-Disabled DWF Files (page 219)

Warn When Viewing a Document with Restrictions (page 246)

## About Opening Other File Types

Besides opening DWF and DWFx files, Design Review can open a wide variety of other file types for viewing or for saving as a DWF file.

- DWG and DXF files
- Adobe PDF files
- Images Files

When opening other file types in Design Review, the original files remain unaffected.

**NOTE** With the proper plug-ins (page 136) installed, Design Review can also open DGN and JT files.

### About Opening DWG and DXF Files

Design Review enables you to open a *DWG (page 282)* or *DXF (page 282)* file through a background conversion process. To do so, Design Review requires

either Autodesk® AutoCAD® or the free DWG TrueView™ program to be installed.

- If AutoCAD is installed, the DWG or DXF file can be converted to either the DWF or DWFx file format. Additional **DWG Viewing** options are available within the Design Review**Options** dialog box to control the conversion quality.

- If only DWG TrueView is installed, the DWG or DXF file is converted to the DWF file format using current DWG TrueView settings.

- If both are installed, AutoCAD is used to convert the DWG or DXF file.

- If neither is installed, you are prompted to download and install DWG TrueView.

For the best conversion results, always use a program's built-in publishing capabilities.

---

**WARNING**  If a DWG file contains sheets with uninitialized layouts, those sheets are not opened in the resulting DWF file.

---

Opening a DWG or DXF file is the same as opening a DWF file. Both DWG and DXF are part of the **All DWF Files (\*.dwf, \*.dwfx, \*.dwg, \*.dxf)** from the **Files of Type** drop-down list in the **Open File** dialog box. Once the DWG or DXF file is open on the canvas, you can view and print it just like any DWF file. If you modify the open DWG or DXF file, you are prompted to save it as a DWF file to retain the modifications. The original DWG or DXF file remains unchanged.

---

**TIP**  When opening a DWG file containing viewports, if the viewports do not display as expected in Design Review, in the **Options** dialog box, on the **DWG Viewing** tab, uncheck the **Fit Drawing to This Size** option and try reopening the DWG file.

---

### About Opening PDF Files

Design Review 2012 enables you to open PDF files and save them as new DWF files. Each PDF page is converted into a new sheet in the opened DWF file. Opening a PDF file is like opening a DWF file, except that you must first select **Adobe PDF (\*.pdf)** from the **Files of Type** drop-down list in the **Open File** dialog box. Once the PDF file is open on the canvas, you can view and print it just like any DWF file. No additional software is required.

Some content in PDF files is not supported by Design Review.
- 3D objects (shown as image)

- Annotations
- File attachments
- Forms (shown as image)
- Hyperlinks (shown as image)
- Layers and bookmarks
- Movies and sounds
- PDF digital signatures (shown as image)
- PDF files with Security settings
- PDF markups
- PDF packages

If a PDF file is password-protected, a dialog box opens prompting for the password. Once you enter the password and click **OK**, protections, such as edit disablements, are not respected by Design Review, nor will they be available if the PDF is saved as a DWF file. If a PDF file contains digital rights management features, Design Review will not be able to open it.

**NOTE** Design Review cannot save an open DWF file in the PDF file format.

**About Opening Image Files**

Design Review enables you to open images and save them as new DWF files. The resulting opened content is a raster image. The way to open an image is like opening a DWF file, except that you must first select the desired image file format from the **Files of Type** drop-down list in the **Open File** dialog box. No additional software is required.

Design Review can open the several image file types.

| Supported Image File Types | Files of Type |
|---|---|
| Bitmap files | *.bmp |
| Mil-R-Raster, multi-sheet files | *.cal, *.cals, *.cg4, *.gp4, *.mil, *.rst |
| GIF files | *.gif |
| IG4 files | *.ig4 |

| Supported Image File Types | Files of Type |
|---|---|
| JPEG files | *.jpg, *.jpeg, *.jpe, *.jfif |
| Paintbrush files | *.pcx |
| Mac files | *.pct, *.pict |
| PNG files | *.png |
| Run Length Compressed files | *.rlc |
| TGA Truevision TARGA files | *.tga |
| Tagged Image File Format files | *.tif, *.tiff |

### About Limitations of Opened PDF and Image Files

When PDF and image files are opened in Design Review, some features are not available.

- **Snap to Geometry** cannot be used.
- Image text is not searched when using **Find**.
- Measurements may be inaccurate.
- PDF and image files cannot be used with **Compare**.

### About Resolution

The resolution of a file refers to how many dots per inch, or *dpi (page 282)* , are shown on the screen. The more dots per inch (that is, the higher the dpi), the better the resolution is, as there is more detail. However, the higher the dpi, the larger the file size.

For DWG files, if AutoCAD is installed, additional **DWG Viewing** options are available within the Design Review**Options** dialog box to control the conversion quality. Before opening a DWG file use the DWG Viewing options to make the resolution higher (specify a larger dpi value) when greater detail is required and make the resolution lower resolution (specify a smaller dpi value) when faster performance is more important. Drawings are typically

created at 400 dpi, the resolution considered most secure, while still allowing acceptable precision of measurements.

For image files, if there is resolution information associated with a file, it displays at that resolution. If there is no resolution information associated with the image, Design Review displays it at 150 dpi.

For PDF files, additional **PDF Conversion** options are available within the Design Review**Options** dialog box to control the resolution. Before saving a PDF file, use the **PDF Conversion** options to make the resolution higher (specify a larger dpi value) when greater accuracy of detail is required and make the resolution lower resolution (specify a smaller dpi value) when faster performance is more important.

**Related Products**

 *Autodesk® Navisworks®* can help you open a wider variety of file types.

**See also:**

# About Opening Multiple Files

Unlike many other Windows-based programs, Design Review cannot open multiple files in one program window. However, you can start multiple instances of Design Review at the same time.

This capability is useful for some of the following tasks:

■ View two or more copies of the same file to review different pages at the same time.

■ View two or more different files.

■ Create different markups in copies of the same DWF file.

   **NOTE** Save each copy under a different name. If they are saved under the same name, the last one to be saved overwrites the first.

- Cut and paste markup between different DWF files to save time on repetitive markup.

- Drag and drop sheets between different DWF files to compose custom DWF files.

---

**TIP** From Windows Explorer or the desktop, you can also open multiple DWF files in separate instances of Design Review by selecting them and then right-clicking the selection and choosing **Open**.

---

**Related Products**

*Autodesk® Navisworks®* can help you combine multiple files.

**See also:**

Compose DWF Files (page 136)


# Open a File

As a file opens, a progress bar indicates the status of opening the file. The progress bar is especially useful when opening a large file.

**To open a file**

1 Click the application button ➤ **Open** ➤ **Open File**.

The **Open File** dialog box opens and **All Supported Files** are shown by default.

**TIP** You can also click the **Open** button on the Quick Access toolbar.

2 Optional: Navigate to where the file you want to open is stored.

3 Optional: From the **Files of Type** drop-down list, select the desired file format.

This selection persists for the current session. When you exit Design Review, your preferred file format setting is discarded and **All Supported Files** will be shown again by default the next time you start the program.

NOTE When opening other file types in Design Review, the original files remain unaffected.

**4** Select the desired file and click **Open**.

If the file is password-protected, a dialog box opens prompting for the password. Enter the password and click **OK**.

The file is opened on the canvas.

If you opened a digitally signed DWFx file, information about the signature is available, and a digital signature icon is shown in the Canvas toolbar.

TIP You can also open recently used files quickly from the **Recent Documents** on the application menu.

**To open a file by dragging and dropping it into Design Review**

■ From Windows Explorer or the desktop, drag a supported file to Design Review and drop it on the canvas.

The file opens in Design Review.

WARNING Dragging a supported file and dropping it into the **Thumbnails** palette or the **List View** palette instead of onto the canvas merges the dropped file with the currently open DWF file.

**To close a file from within Design Review**



■ Click the application button ➤ **Close**.

If no changes were made to the open file, the open file closes. If changes were made to the open file, you are prompted to save the changes. To save the changes to the existing file, click **Yes**. To continue exiting and discard the changes, click **No**. To return to the open file, click **Cancel**.

The open file closes, leaving the Design Review window open.

**To exit Design Review**

■ Click the application button ➤ **Exit Design Review**.

If no changes were made to the open file, the open file closes and Design Review exits. If changes were made to the open file, you are prompted to save the changes. To save the changes to the existing file, click **Yes**. To continue exiting and discard the changes, click **No**. To return to Design Review, click **Cancel**.

**See also:**

# Open a DWF File from Buzzsaw

Autodesk Buzzsaw is a collaboration and project management program that enables team members to deposit, view, copy, discuss, and print documents or drawings related to their project.

If you are a member of a Buzzsaw project site, you can open and save DWF files to that site. Have your user name, password, and location of the file available. See your project or site administrator if you have a problem with Buzzsaw.

**To open a DWF file from Buzzsaw**

1   Click the application button ➤ **Open** ➤ **Open From Buzzsaw**.



   The Buzzsaw Login dialog box opens.

2   Enter your **User Name**, **Password**, and **Site**.

3   Click **OK**.

   The **Open File from Buzzsaw** dialog box opens.

4   Optional: Navigate to where the file you want to open is stored.

5   Optional: From the **Files of Type** drop-down list, select the desired file format.

6   Select the desired file and click **Open**. If the file is password-protected, enter the password.

   The file opens and is set to read-only mode. You cannot save changes to it. To save changes, you must save it using another file name.

**See also:**

# Locate DWF-Related Content

## Find Text in an Open DWF File

You can quickly locate text in an open DWF file by searching for tabular data, markups, text on 2D sheets, objects, sheet names, and their properties. Found results are shown in a convenient list, enabling you to click a result to display the found text or associated object on the canvas or in a palette.

By default, the entire DWF file is searched for the term you enter in the **Find** drop-down list. You can narrow your search by clicking the **Advanced Search** button in the **Find** palette.

- **Find Whole Words Only.** Find only whole words that match the text in the **Find** drop-down list. For example, if you select **Find Whole Words Only** and search for *bolt*, **Find** does not locate the text string *bolts* or *bolted*. When the search term contains spaces or punctuation, the **Find Whole Words Only** option is disabled.

- **Use Wildcards.** Find all text that contains a known portion of a word. The question mark (?) wildcard enables you to find words containing an unknown single character. For example *w?re* finds *wire* and *ware*. The asterisk (*) wildcard enables you to find words containing an unknown string of characters. For example, *l*t* finds *lift* and *last*. When **Use Wildcards** is selected, the **Match Case** and **Find Whole Words Only** options are disabled.

- **Match Case.** Find only text that matches the capitalization used in the **Find** drop-down list.

- **Find In.** Find text in particular locations. Select the type of content being searched: **All**, **Current Model** or **Sheet**, **Current Table**, **Markups**, **Models**, **Sheets**, **Tables**.

### Hidden Text

In some cases, when a DWF file is published, a font is published as geometry. Consequently, although content appears to be text in the DWF file, it is not. As a result, geometric representations of text are not found.

Another instance when text may not be found is when PDF and image files are opened in Design Review. All text and geometry in the source file is rasterized in the resultant DWF file. Consequently, text in such files cannot be searched.

In other cases, Design Review may be unable to locate text accurately. On those occasions, a light blue "A" icon  is shown in the **Results** list and an indicator is shown on the canvas the general area on the sheet where text is found. This indicator is not printed, and is only visible while the **Find** palette is open.



**Hidden text indicator**

**To find text in an open DWF file**

1 Click **Home** tab ➤ **Search** panel.

2 In the **Find** drop-down list, type the text you want to locate.

As you type, the most recently searched terms are shown and can be selected.

3 Click **Go**. 

The **Find** palette opens.

**TIP** You can also display the **Find** palette by clicking **Home** tab ➤ **Workspace** panel ➤ **Show/Hide Palettes** drop-down list and selecting **Find**.

If results are found that meet your criteria, matches are displayed in the **Results** list. The total number of found results is shown above the **Results** list.

**TIP** If results are not found, click **Advanced Search**  in the **Find** palette, specify one or more additional options, and try again.

4 Click the desired result to display the found text or associated object on the canvas or in a palette.

# Search Autodesk Seek

With Autodesk® Seek you can find and share product design information with the online design community to enhance designs and to meet specific customer needs. It allows designers to search for, download, and integrate generic or manufacturer-specific building products or components and associated design information.

**IMPORTANT** Accessing and searching Autodesk Seek requires an active Internet connection.

**NOTE** Autodesk Seek is currently available in US English only.

**To display the Autodesk Seek home page**

■ Click **Home** tab ➤ **Search** panel ➤ **Search Autodesk Seek**.

A new browser window opens displaying the Autodesk Seek home page.

On the Autodesk Seek home page, enter one or more terms into the search box and click the **Search** button.

**Filtering Search Results**

After you have searched for product information, you can reduce the number of displayed results by applying filters. On the Autodesk Seek web page, apply filters to narrow the results of a search.

Available filters depend on information supplied by content providers when the design files are added to the Autodesk Seek website.

# Use Published Hyperlinks

Some DWF files published by AutoCAD, Inventor, and Revit have *hyperlinks (page 283)* embedded in them, connecting them to other views, drawings, 3D models, web pages, or other data such as parts lists or bills of material.

Some hyperlinks link to multiple locations. When you place the mouse pointer over a hyperlink, a hyperlink viewport is displayed. If more than one destination exists, the viewport displays "Multiple URLs - Ctrl-click to follow link". When you press Ctrl and click, the viewport displays a list of the links you can follow from the current hyperlink.

**To show or hide hyperlinks**

1   Click **Home** tab ➤ expand the **View** panel.
2   Click **Show Hyperlinks**.

If there are hyperlinks on the sheet, *objects (page 284)* and text that do not have hyperlinks turn grayscale (black and white), and objects or text with hyperlinks are typically highlighted in blue.

To hide hyperlinks, repeat this step. The grayscale returns to color, and the highlighting on hyperlinks are turned off.

**To follow a hyperlink**

■   Press and hold Ctrl and click the hyperlink (Ctrl-click).

The zoomed view, drawing, model, or web page to which it was linked opens. If the link is to a table or list, the pane that it opens in becomes active.

---

**NOTE** If you follow a hyperlink to a table, you may need to resize the **Grid Data** palette to view the table.

---

You can choose to follow included links or not, but you cannot change the hyperlinks in the published DWF file.

**See also:**

Hyperlink Settings (page 247)
Hyperlinks in Tables (page 126)

# View DWF Files

## Change 2D Sheet Views

### View a DWF File in Grayscale or Black and White

When you open a DWF file, it is displayed on the canvas with the color properties that were set when it was published. However, you can view the sheets in either shades of gray or black and white.

**NOTE** The 3D DWF files are shown in grayscale, even if **Black & White** is selected.

**To view a DWF file in shades of gray**

1 Click **Home** tab ➤ expand the **View** panel.

2 From the **Color Depth** drop-down list, select **Grayscale**.
The sheets are shown on the canvas in grayscale.

**To view a DWF file in black and white**

1 Click **Home** tab ➤ expand the **View** panel.

2 From the **Color Depth** drop-down list, select **Black & White**.
The sheets are shown on the canvas in black and white.

# Pan and Zoom the View of the Canvas

You can change how a sheet or model is displayed on the canvas using the **Pan** and **Zoom** tools. Panning repositions the vantage point, parallel to a sheet or model on the canvas. Zooming in moves the vantage point closer to the content, making it appear larger. Zooming out moves the vantage point farther away from the content, making it appear smaller.

Neither **Pan** nor **Zoom** affects the contents of the sheet or model being viewed. Only the view of the content changes.

**NOTE** When a markup is created, the current zoom and pan settings are stored with that markup.

**To pan the view of the canvas**

1 On the **Canvas toolbar**, click **Pan**.

The mouse pointer changes to the **Pan** tool.

2 Click and drag the mouse pointer to move the view parallel to the screen.

**TIP** You can also use the arrow keys to pan the view of the canvas.

**To zoom the view of the canvas**

1   On the **Canvas toolbar**, click **Zoom**.

    The mouse pointer changes to the **Zoom** tool.

2   Click and drag the mouse pointer upward to zoom in or downward to
    zoom out.

    **TIP** With the **Zoom** tool active, you can also click the canvas to zoom in
    and Alt-click the canvas to zoom out.

The dragging direction can be switched by changing the **Zoom** tool settings
on the **General** tab in the **Options** dialog box.

**TIP** You can also roll the mouse wheel forward to zoom in and backward to zoom
out.

**To fit the content to the window**

■   On the **Canvas toolbar**, click **Fit to Window**.

    For 2D content, the canvas view changes to show the greatest possible
    magnification that still shows all content. For 3D content, the canvas view
    centers on the model.

**To zoom in on a particular area**

1   On the **Canvas toolbar**, click **Zoom Rectangle**.

    The mouse pointer changes to a magnifying glass with a rectangle.

2   Click the canvas to define one corner of the rectangle.

3   Drag the mouse pointer diagonally to define the rest of the rectangular
    area.

    When viewing 3D objects, as you drag the mouse pointer, a circle displays
    in the middle of the rectangular area. The circle defines the new rotation
    target, or pivot.

    The view changes to display only the contents in the rectangular area
    you defined.

**To show the previous view**

**1** Click **Home** tab ➤ expand the **View** panel.

**2** Click **Previous View**.

The previous view is shown.

**To show the next view**

**1** Click **Home** tab ➤ expand the **View** panel.

**2** Click **Next View**.

The next view in the sequence is shown.

**To hide or show the canvas background in a 2D DWF file**

**1** Click **Home** tab ➤ expand the **View** panel.

**2** Click **Show Canvas Background**.

If the canvas background was shown, it is hidden. If the canvas
background was hidden, it is shown.

**TIP** To change the background of a 3D DWF file, in the **Options** dialog
box, on the **Model** tab under **Color Settings**, uncheck **Use Gradient
Background**.

See also:

NO LABEL

NO LABEL

## Use the 2D Navigation Wheel

Autodesk® SteeringWheels®, or wheels, are part of the Design Review user
interface and provide several ways to change the view. Like a toolbar, each
**SteeringWheel** provides easy access to many related tools.

The **2D Navigation Wheel** is a *tracking menu (page 285)* , meaning, when
enabled, it tracks, or follows, the mouse pointer within the canvas. The **2D**

**Navigation Wheel** saves you time and clicks by combining **Pan** and **Zoom** in a single tool.

---

NOTE  The **2D Navigation Wheel** is the only **SteeringWheel** available when viewing 2D content.

---
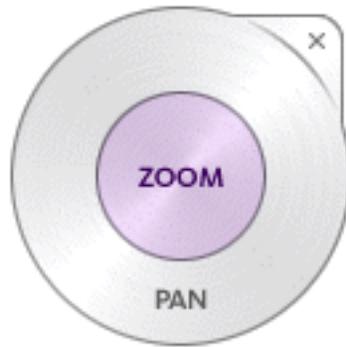


2D Navigation Wheel

Right-clicking the **2D Navigation Wheel** provides access to additional commands.

**2D Navigation Wheel Menu Commands**

| Icon | Menu Choice | Description |
|------|-------------|-------------|
|  | **Go Home** | Reset the view to the original, published view. |
|  | **Fit to Window** | **Zoom** the view to fit the object on the canvas. |
|  | **Help** | Open the Design Review **Help** file. |
| | **Options** | Open the **Options** dialog box **SteeringWheels** tab. |

**To display the 2D Navigation Wheel**

1   On the **Canvas toolbar**, click the **SteeringWheel** button drop-down.

**2** Select **2D Navigation Wheel**.

The **2D Navigation Wheel** is shown and follows the mouse pointer on the canvas.

**To pan the view of the canvas using the 2D Navigation Wheel**

**1** Click and hold the **Pan** wedge.

The mouse pointer changes to the **Pan** tool.

**2** Drag the mouse pointer to move the view parallel to the screen.

**3** Release the mouse button to exit the **Pan** tool.

**To zoom the view of the canvas using the 2D Navigation Wheel**

**1** Click and hold the **Zoom** wedge.

The mouse pointer changes to the **Zoom** tool.

**2** Drag the **Zoom** tool upward to zoom in, or downward to zoom out.

**3** Release the mouse button to exit the **Zoom** tool.

**See also:**

## Reset the View

Sometimes you want to return the view to the way the person who published the DWF file intended. To do that, reset the view. When you reset a view in Design Review you have two choices: the home view and the starting view. The home view is a particular view of a file defined by the designer before publishing the DWF file. Designers often set a home view to show a part or design a certain way to reviewers. The starting view is the view that happened to be displayed at the time the designer published the file.

If the file has no specified home view, the starting view is shown. If the designer had the home view displayed at the time the DWF file was published, the starting and home view are the same in Design Review.

The view returns to the particular view defined by the designer.

**To reset the view to the starting view**

1   Click **Home** tab ➤ expand the **View** panel.

2   Click **Starting View**.

The view returns to the view that was displayed at the time the designer published the file.

**TIP** For 3D content, you can also right-click the **ViewCube** and select **Starting View**.

## Rotate 2D Sheets

Design Review enables you to rotate 2D content, including sheets and *raster images (page 284)* . In the **Thumbnails** or **List View** palette, you can select a sheet and spin it in 90-degree increments, right or left.

The **Rotate Sheet Right** and **Rotate Sheet Left** tools have some noteworthy limitations.

■   2D sheets with markups cannot be rotated. After markups have been added to the content, Rotate menus and buttons are disabled.

■   3D sheets cannot be rotated.

■   Tabular data cannot be rotated.

■   Multiple sheets cannot be rotated.

■   A DWF file containing rotated sheets does not display as expected when it is brought back into a publishing program, such as AutoCAD.

**TIP** When a selected sheet is rotated, the canvas content and the icon in the **Thumbnails** palette are rotated at the same time.

**To rotate 2D content**

1   In the **Thumbnails** or **List View** palette, select the 2D sheet you want to rotate.

**2** Rotate the selection in the desired direction.

■ Click **Tools** tab ➤ **Canvas** panel ➤ **Rotate Sheet Right**  or **Rotate Sheet Left**. 

The selected sheet rotates 90°.

**See also:**

# Change 3D Model Views

## About 3D DWF Files

A 3D DWF file is one that contains at least one 3D model. A 3D model is a meaningful set of geometrical shapes. Geometrical shapes can be combined into meaningful sets, known as "assemblies," "blocks," or "objects." A company may collect these objects for frequent reuse (electrical parts, mechanical parts, plumbing, or furniture), as they can be plugged into larger drawings or models. A series of doors, for example, can be plugged into various architectural renderings.

Each object may include smaller objects, sometimes called subobjects. Each subobject, in turn, may be referred to as an object that may contain other subobjects. For instance, a truck object may have several door subobjects that each contains several door handle subobjects. It is relative. The relationship between an object and its subobjects is displayed in the hierarchical tree view in the Model palette.

---

**NOTE** AutoCAD and Inventor do not share a common *WCS (page 286)* (World Coordinate System) with Design Review. In AutoCAD and Inventor, Z is up. In Design Review, Y is up.

---

In certain cases, your graphics card may cause problems. For example, a model may be displayed incorrectly on the screen. If you experience display problems, on the Model tab of the Options dialog box, you can adjust the View Settings.

**Use Perspective View**

By default, all 3D views appear as orthographic views, in which all lines on each axis are parallel to each other. You can add perspective to the views, which shows parallel lines converging to give the illusion of depth. Only orthographic views are appropriate for measuring.

**To turn on Perspective**

1  Click **Home** tab ➤ expand the **View** panel.

2  Click **Perspective**.

The view changes to a perspective view.

Repeat these steps to turn off the perspective view for the 3D content.

---

**TIP** You can also right-click the **ViewCube** to switch between **Perspective** and **Orthographic** views.

---

**See also:**

## Use Standard 3D Model Views

DWF files that include 3D models provide reviewers the ability to virtually manipulate objects (or structures), create cross sections, add markup, or tour the interior of architectural models. With Design Review, you can change the view of a model to a standard view by selecting a view from the Standard Views drop-down on the **Home** tab ➤ **View** panel.

**Standard 3D Model Views**

| | |
|---|---|
|  | **Front Top Left** |
|  | **Front Top Right** |
|  | **Front Bottom Left** |

| | |
|---|---|
| | **Front Bottom Right** |
| | **Front** |
| | **Back** |
| | **Top** |
| | **Bottom** |
| | **Left** |
| | **Right** |

**To select a standard view**

1  Click **Home** tab ➤ **View** panel ➤ Standard Views drop-down.

2  Select the desired view.

**TIP** You can also use the **ViewCube** to change 3D model views quickly.

**See also:**

Shade 3D Objects (page 93)

Use Perspective View (page 64)

Use the ViewCube  (page 72)

# Change the Field of View

When looking through a device from a specific location, or vantage point, the area that can be seen is called the field of view. Increasing the angle of view makes the field of view larger. Decreasing the angle of view makes the field of view smaller.
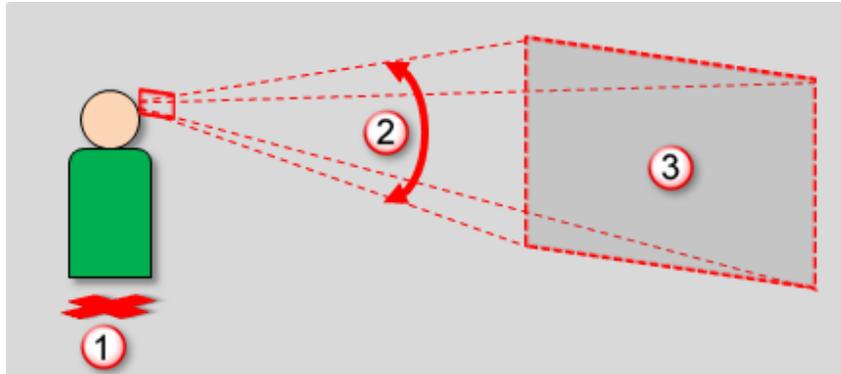


**From the current vantage point (1), the angle of view (2) determines the size of the field of view (3)**

**Field of View** and **Zoom** may seem similar. However, the difference between the two is the vantage point. Changing the field of view keeps the vantage point in the same place, while still enabling you to control how much content is shown. Because the vantage point does not change when using the **Field of View** tool, you can control the viewing experience more easily in confined areas, such as architectural interiors.

In contrast, zooming moves the vantage point to a new location. Zooming in moves the vantage point closer to the content, making it appear larger. Zooming out moves the vantage point farther away from the content, making it appear smaller. If necessary, use the **Zoom** tools carefully when viewing inside models. Because zooming moves the vantage point, you may literally zoom the view right through obstructions, such as a furniture, machinery, or

walls, potentially leaving you viewing the outside of the model rather than the inside.
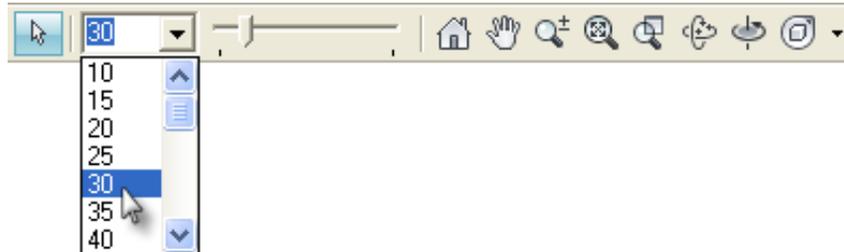


**The current angle of view is shown in the Field of View tools on the Canvas toolbar**

To focus on a single object in the house, such as a fireplace, use the **Field of View** tools on the **Canvas toolbar** to decrease the angle of view, making the field of view smaller. The result is that the fireplace appears closer and larger.
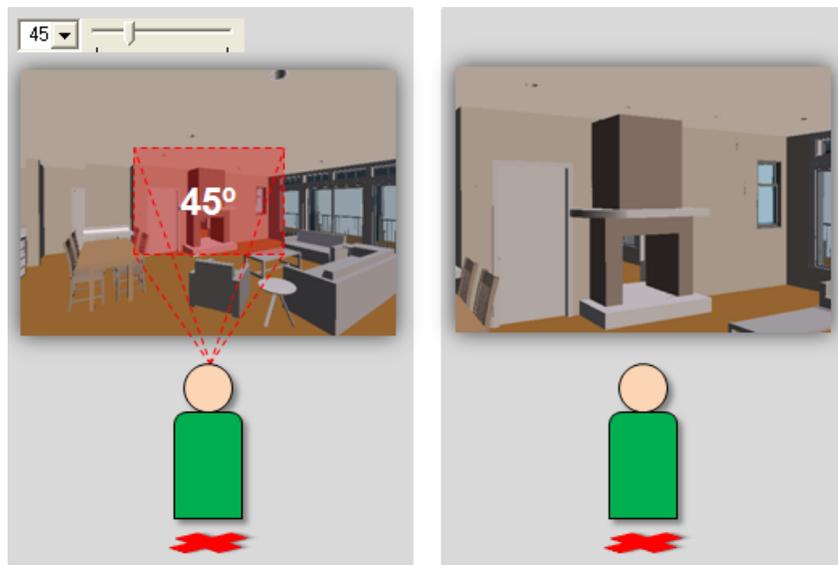


**A smaller field of view (left) displays objects closer and larger without moving the vantage point (right)**

To see more objects in the room, use the **Field of View** tools to increase the angle of view, making the field of view larger. The result is that the fireplace and other objects in the room appear farther away and smaller. You merely

adjust the angle of view to display what you want to see. Your vantage point stays the same.
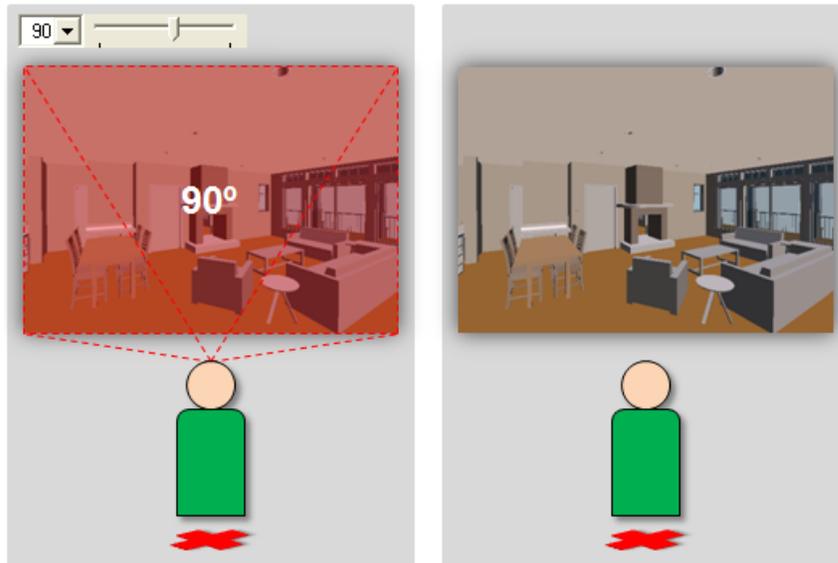


**A larger field of view (left) displays more objects farther away and smaller without moving the vantage point (right)**

**WARNING** Extremely large fields of view may distort how objects appear, similar to when **Perspective** is enabled. Smaller fields of view may cause objects to appear flatter, similar to an orthographic view.

**IMPORTANT** Saving to **My Views** retains display changes, such as cross sections, field of view, layers, lighting, and 3D object movements and rotations.

### Field of View Limitations

The **Field of View** tools have some noteworthy limitations.

■ The **Field of View** tools are only enabled when viewing 3D content.

■ The **Field of View** tools are disabled when an animation is playing or viewing 2D content.

■ Changes to the field of view are only applied to the 3D content currently displayed on the canvas.

■ Changes to the field of view are not specifically saved with the DWF file. However, you can retain **Field of View** settings as part of a new My View or as part of a markup.

- Like other view changing tools in Design Review, you cannot use the **Undo** or **Redo** tools to revert or repeat changes made using the **Field of View** tools.

---

**TIP** If altering the view produces unexpected results, use **Previous View**, **Next View**, or **Rewind** (on the **Full Navigation Wheel**) to return the view to an acceptable location.

---

**To change the field of view**

- From the **Field of View** drop-down list, select a preset angle value between 10° and 150°.

- In the **Field of View** drop-down list, type a precise angle value between 1° and 179°.

- Or, drag the **Field of View** slider left to decrease or right to increase the area that can be seen. Like the drop-down list, the slider has preset angle values between 10° and 150°.

**See also:**

## Orbit the View Around a 3D Model

When you use the **Orbit** tool to change the view of a 3D model, you move the camera location (the point of view) around a stationary, green spherical rotation target, called the **Pivot**. Generally the **Pivot** is the center of the object in view. However, if you use the **Zoom Rectangle** tool or some 3D **SteeringWheel** tools, the **Pivot** changes.

---

**IMPORTANT** Saving to **My Views** retains display changes, such as cross sections, field of view, layers, lighting, and 3D object movements and rotations.

---

You can rotate the 3D **Orbit** view several ways:

| | |
|---|---|
|  | Rotate. Click and drag in any direction to rotate the view around the model. |
|  | Rotate Horizontally. Press and hold Shift, click, and drag. The rotation is horizontally constrained. |
|  | Rotate Vertically. Press and hold Ctrl, click, and drag. The rotation is vertically constrained. |
|  | Rotate Parallel to the Screen. Press and hold both Ctrl and Shift, click, and drag. The rotation is constrained to a plane that is parallel to the screen. |

**To rotate the view of a model**

1   On the **Canvas toolbar**, click **Orbit**.

The mouse pointer changes to the **Orbit** tool.

**TIP** You can also right-click the canvas and select **Orbit**.

2   Click and drag to rotate the view of the model.

In the 3D **Orbit** view, the **Pivot** is the center of the objects in view.

**To change the Pivot location using the Zoom Rectangle tool**

1   On the **Canvas toolbar**, click **Zoom Rectangle**.

The mouse pointer changes to the **Zoom Rectangle** tool.

**TIP** You can also right-click the canvas and select **Zoom Rectangle**.

2   Click the canvas to define one corner of the rectangle.
3   Drag the mouse pointer diagonally to define the rest of the rectangular area. As you drag, a circle displays in the middle of the rectangular area. The circle defines the new **Pivot** location.

**4** Release the mouse button. The drawing is zoomed to the area that you defined with the rectangle, and the **Pivot** is changed to the area defined by the circle.

**See also:**

## Spin the View of a 3D Model

An alternative to the **Orbit** tool, the **Turntable** tool is intended for people viewing 3D architectural models, when it is desirable to have the vertical axis locked such that the model cannot be flipped. The **Turntable** tool enables you to examine a model or object while maintaining the view aspect relative to its base, or the ground, as defined by the DWF publisher.

The **Turntable** tool prevents the camera angle pass beyond the vertical plane when rotating horizontally. The maximum camera angle from the horizon is 90° (above or below) to help maintain the defined orientation of the model.

---

**TIP** Use the **Pan** and **Zoom** tools to prepare the view before starting the **Turntable** tool.

---

**IMPORTANT** Saving to **My Views** retains display changes, such as cross sections, field of view, layers, lighting, and 3D object movements and rotations.

---

**To spin the view of a 3D model**

**1** On the **Canvas toolbar**, click **Turntable**.

The mouse pointer changes to the **Turntable** tool.

**TIP** You can also right-click the canvas and select **Turntable**.

**2** Change the view of the 3D model horizontally or vertically.
   ■ Click and drag left or right to spin the view of the model around its vertical axis. This enables you to view the entire outer surface of a 3D model while maintaining a constant distance and viewing angle.

■ Click and drag up or down to spin the view of the model around its horizontal axis. This enables you to view the model from the top down or from the bottom up.

**To constrain the Turntable tool**

■ Press and hold Shift and click and drag horizontally or vertically to limit rotation to a restricted linear path along one of these planes.

The **Turntable** tool remains active until you press Esc or select another tool.

# Use the ViewCube

## About the ViewCube

The Autodesk®**ViewCube**® 3D navigation widget is a persistent, clickable interface that provides a reference to the current orientation of the model and allows you to switch between standard and isometric views quickly.

When the **ViewCube** is displayed, it is shown in one of the corners of the canvas, over the model, in an inactive state. While the **ViewCube** is inactive, it provides a visual reference about the current view of the model as view changes occur. When the mouse pointer is positioned near the **ViewCube**, it becomes active and allows you to switch to one of the available preset views, roll the view, or return to the **Home** or **Starting View** of the model.

Some other Autodesk products have also incorporated the **ViewCube** user interface. For 3D DWF files published from these applications, the **ViewCube** views in Design Review are the same as the **ViewCube** views that the designers have in their authoring applications.
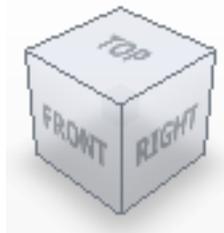


**The ViewCube**

The **ViewCube** may include a compass ring, displayed below the cube. When a designer, working in an Autodesk design application such as Revit or AutoCAD, includes this **ViewCube** element, it is displayed in Design Review as part of the **ViewCube**. The compass, like the **ViewCube** itself, can be dragged to manipulate the model on the canvas, or you can click the cardinal headings for North, East, South, or West (N, E, S, or W, respectively) to pan to that view immediately.

As a part of the **ViewCube**, the compass cannot be shown or hidden independently. If you hide the **ViewCube**, the compass, if present in the file, will also be hidden.



**The ViewCube with the compass**

### ViewCube Orientation

The **ViewCube** is oriented to the currently selected  *UCS (page 285)* , when one is active. When no UCS is active, the **ViewCube** is oriented to the  *WCS (page 286)* . This setting can be changed to orient the **ViewCube** to the WCS, on the **ViewCube** tab in the **Options** dialog box.

### ViewCube Menu

Click the **ViewCube** menu button  to perform additional operations, change the displayed view projection, or access the **Options** dialog box.

| Button | Description |
| --- | --- |
|  | **Previous View**. Switch to previous view of content |

| Button | Description |
|--------|-------------|
| | **Next View**. Switch to next view of content |
| | **Starting View**. Switch to the initial view of the model. The **Starting View** is the view that a DWF file publisher had displayed at the time the file was published. <br> If the designer had their **Home** view displayed at the time the file was published to DWF, the **Starting View** and **Home** view will be the same in Design Review. |
| | **Home**. Switch to the **Home** view of the model as defined by the designer in the authoring application. <br> If the file has no specified **Home** view, the **Starting View** will be used. |
| | **Perspective** or **Orthographic**. Switch between **Perspective** and **Orthographic** views. |
| | **Options**. Opens the Program Options dialog box with the **ViewCube** tab displayed. |

**TIP** You can also right-click the **ViewCube** to display the menu.

### Control the Appearance of the ViewCube

The **ViewCube** is displayed in one of two states: inactive and active. When the **ViewCube** is inactive, it is transparent so that the view of the model is not obscured. When the **ViewCube** is active, it appears opaque and may obscure the area of the canvas and any objects behind it.

Typically the **ViewCube** is displayed in the inactive state. When the mouse pointer is near the **ViewCube** it becomes active, allowing selection of the various **ViewCube** elements.

In the **Options** dialog box, on the **ViewCube** tab, you can set the inactive opacity of the **ViewCube** as well as its size, on-screen position, and other settings.

**See also:**

Add a User Coordinate System (page 203)

## Change Views with the ViewCube

Regardless of the tool you are currently using, you can use the **ViewCube** to change the view of the model.

---

**IMPORTANT**  Saving to **My Views** retains display changes, such as cross sections, field of view, layers, lighting, and 3D object movements and rotations.

---

**To change views with the ViewCube**

When you move the mouse pointer over the **ViewCube**, regions of the cube are highlighted. The highlighted areas of the **ViewCube** correspond to the standard 3D model views, as well as edge views such as Top-Front, or Back-Left.

■ Click the **ViewCube** to pan to the selected view immediately.

**To reset the view to the designer assigned home view**

■ Above the **ViewCube**, click the **Home** button.

The model returns to the **Home** view.

The **ViewCube** home view in the DWF file can be assigned by the designer to be the same as the **ViewCube** home view in the authoring application. If a home view is not specified in the file, clicking the **Home** button returns to the starting, or initial, view.

**TIP**  You can also right-click the **ViewCube** and select either **Starting View** or **Home** (view).

**To view adjacent faces**

When viewing a face view, the four small arrows surrounding the **ViewCube** can be used to rotate the object to an adjacent face view. For example, when

viewing the **Front** face, click the arrow to the left of the **ViewCube** to see the **Left** face view.

■ Click an Adjacent Face Arrow to pan to that face view.



**ViewCube face view with Adjacent Face Arrows, Roll Arrows, and Home button displayed**

**To roll a face view**

The Roll Arrows near the top, right corner of the **ViewCube** roll the current

face view 90°, counter-clockwise , or clockwise , each time one is clicked.

**NOTE** The roll arrows are displayed in different positions, relative to the **ViewCube**, when the **ViewCube** location is changed.

■ Click a Roll Arrow to rotate the view 90°.

**To orbit an object with the ViewCube**

■ Click and drag the **ViewCube** in any direction.

**To hide the ViewCube**

1   Click **Home** tab ➤ expand the **View** panel.
2   Uncheck **Show ViewCube**.
    The **ViewCube** is hidden.

    **TIP** You can also enable or disable the **ViewCube** from the **ViewCube** tab in the Program Options (page 251) dialog box.

## Examine Individual Objects with the ViewCube

When the **ViewCube** Fit-to-View on View Change (page 252) option is enabled, clicking the **ViewCube** pans and zooms the view to fit the model, or any currently selected part or subobjects, to the canvas. Use the **ViewCube**, after pulling a part a model using the **Move & Rotate** tool, to more closely examine the part or parts you have moved.

---

**IMPORTANT** Saving to **My Views** retains display changes, such as cross sections, field of view, layers, lighting, and 3D object movements and rotations.

---

**To use the ViewCube to examine an individual object**

1  Select a part in the **Model** palette, or by clicking one on the canvas using the **Select** tool.

2  Click the desired view on the **ViewCube**.

   The selected object is displayed centered and zoomed on the canvas.

If the view of the selected object is obscured by other parts of the model, you can hide the obstructions.

**To disable Fit-to-View on View Change**

1  Click the application button ➤ **Options**.

2  On the **ViewCube** tab, uncheck the **Fit-to-View on View Change** option.

3  Click **OK**.

**See also:**

Change the Visibility of Objects and Subobjects (page 91)

Pull Apart 3D Models (page 95)

## Use the 3D SteeringWheels

Autodesk® SteeringWheels®, or wheels, are part of the Design Review user interface and provide several ways to change the view. Like a toolbar, each **SteeringWheel** provides easy access to many related tools. The tool buttons on the wheel are called  *wedges (page 286)* . Design Review has several

SteeringWheels: the **2D Navigation Wheel**, **View Object Wheel**, the **Tour Building Wheel**, and the **Full Navigation Wheel**.

Additionally, the 3D wheels have "Mini Wheel" variants. The Mini Wheels contain most of the same tool wedges as their full-size counterparts and can be also be accessed from the **Canvas toolbar** and wheel right-click menu locations.

All of the wheels are *tracking menus (page 285)* because they track, or follow, the mouse pointer within the canvas when a wheel is enabled. The tools vary depending on which **SteeringWheel** is shown.

Of the available 3D SteeringWheels, two are sometimes referred to as Easy Wheels: the **View Object Wheel** and the **Tour Building Wheel**. As their names imply, each Easy Wheel is intended to make it easier for reviewers who have little or no experience manipulating 3D objects on screen to view particular types of models. Unlike the Easy Wheels, the **Full Navigation Wheel** contains the complete Easy Wheel toolsets and more. The **Full Navigation Wheel** is intended for more advanced users of Design Review.

By default, when you view a 3D model, the **Full Navigation Wheel** is displayed, pinned, in the lower-left corner of the canvas. As you move the mouse pointer over the pinned wheel, a tabbed dialog box is displayed. The tabs are labeled "New to 3D" and "Familiar with 3D". Click either tab to see information about the various SteeringWheels that are available.

On the Familiar with 3D tab, in addition to the **Full Navigation Wheel**, you have the option of selecting one of the three Mini 3D Wheels. The Mini Wheels most of the same tool wedges as their full-size counterparts. The main difference of with the Mini Wheels, is that the wheel is also the mouse pointer.

---

**IMPORTANT** Saving to **My Views** retains display changes, such as cross sections, field of view, layers, lighting, and 3D object movements and rotations.

---

**To unpin a SteeringWheel**

1 Move the mouse pointer over the wheel that is pinned to the canvas to display the **SteeringWheels** dialog box.

2 Click either the **New to 3D** tab or the **Familiar with 3D** tab.

3 Click a wheel to activate it.

---

**TIP** You can also click the pinned wheel itself, or click the **SteeringWheel** drop-down  on the **Canvas toolbar** and select a wheel.

---

**To start Design Review with no pinned SteeringWheel displayed**

**1** Click the application button ➤ **Options**.

**2** On the **SteeringWheels** tab, in the **Display** group, uncheck **Display the Pinned Wheel on Startup**.

**3** Click **OK**.

The next time Design Review starts, no wheel will be pinned to the canvas.

**NOTE** To display the pinned wheel, follow these steps but check the **Display the Pinned Wheel at Startup** option. The next time you start Design Review, and view a 3D model, the wheel will be pinned to the canvas.

**To access the Wheel Menu**

■ In the lower, right corner of a wheel, click the Wheel Menu button.

**TIP** You can also right-click anywhere on a wheel to access the menu.

**3D SteeringWheel Menu Commands**

| Icon | Menu Choice | Description |
|------|-------------|-------------|
| | 2D Navigation Wheel | This button is unavailable. The 2D Navigation Wheel is not available when viewing 3D content. |
| | View Object Wheel | Switch to the View Object Wheel. |
| | Tour Building Wheel | Switch to the Tour Building Wheel. |
| | Full Navigation Wheel | Switch to the Full Navigation Wheel. |
| | Mini View Object Wheel | Switch to the Mini View Object Wheel. |
| | Mini Tour Building Wheel | Switch to the Mini Tour Building Wheel. |

| Icon | Menu Choice | Description |
|---|---|---|
| | Mini Full Navigation Wheel | Switch to the Mini Full Navigation Wheel. |
| | Go Home | Switch to the Home view of the model as defined by the designer in the authoring application.<br>If the file has no specified Home view, the Starting view is used. |
| | Fit to Window | Zoom the view to fit the object on the canvas. |
| | Level Camera* | Rotate the camera angle to zero degrees on the X-axis. |
| | Increase Walk Speed* | Incrementally increase the speed of the Walk tool. |
| | Decrease Walk Speed* | Incrementally decrease the speed of the Walk tool. |
| | Constrain Walk to Ground Plane* | Keep the camera level with the ground while using the Walk tool.<br>Checked by default.<br>This option can also be set on the SteeringWheel tab in the program Options dialog box. |
| | Invert Axis* | Invert the Look tool axis.<br>This option can also be set on the SteeringWheel tab in the program Options dialog box. |
| | Restore Original Center | Restore the default **Pivot** location. |
| | Help | Open the Design Review Help file. |
| | Options | Open the Options Dialog box SteeringWheels tab. |
| | Close Wheel | Exit the SteeringWheel and switch to the Orbit tool. |

* These commands are available on the Full Navigation Wheel and Mini Wheels only.

**To close a SteeringWheel**

■ In the upper, right corner of a wheel, click the **Close** button. ✕

NOTE If the wheel is pinned, you must make it active before you can close it.

**Related Products**

 *Autodesk® Navisworks®* can apply a gravity effect to help you create more effective architectural walk-throughs.

**See also:**

## Change 3D Views with the View Object Wheel

The **View Object Wheel**, one of the Easy Wheels, contains tools that are commonly used when viewing assemblies or individual parts. The **View Object Wheel** is only available when 3D content is displayed on the canvas.



View Object Wheel

**View Object Wheel Wedges**

| Wedge | Description |
|---|---|
| **Center** | Redefine the center of rotation for the object. |
| **Zoom** | Dynamically zoom the view. |
| **Rewind** | Return to a previous view. |
| **Orbit** | **Orbit** the view of the object. |

**IMPORTANT** Saving to **My Views** retains display changes, such as cross sections, field of view, layers, lighting, and 3D object movements and rotations.

**To display the View Object Wheel**

1   On the **Canvas toolbar**, click the **SteeringWheel** drop-down.

2   Select **View Object Wheel**.

    The wheel appears and follows the mouse pointer on the canvas.

**To change the Pivot location using the Center wedge**

1   On the **View Object Wheel**, click and hold the **Center** wedge to display the **Pivot** location.

    The mouse pointer changes to the **Center** tool.

    **NOTE** The **Pivot** sphere only appears when the mouse pointer is over an object. When the tool is not over geometry, a circle with a line through it is displayed.

2   Drag the **Pivot** to the location around which you would like to orbit.

3   Release the mouse button to change the **Pivot** location.

    The view pans to show the new **Pivot** location at the center of the canvas.

    **TIP** You can also change the **Pivot** location by clicking the **Zoom** wedge.

    The new **Pivot** location will be used the next time you orbit the model using the **Orbit** tool, the **ViewCube**, or the **Orbit** wedge on one of the 3D **SteeringWheels**.

**NOTE** You can restore the original **Pivot** location by right-clicking the **SteeringWheel** and choosing **Restore Original Center**.

**To zoom the view**

1 Click and hold the **Zoom** wedge.

The mouse pointer changes to the **Zoom** tool.

2 Drag the **Zoom** tool upward to zoom in dynamically, or downward to zoom out dynamically.

3 Optional: Click the **Zoom** wedge once to zoom in incrementally.

**TIP** Press and hold Shift and click the **Zoom** wedge once to zoom out incrementally.

4 Release the mouse button to exit the **Zoom** tool.

**To return to a previous view**

1 Click and hold the **Rewind** wedge.

A series of thumbnails is displayed. New thumbnails are created each time you release the mouse button when using any 3D SteeringWheel.

2 Move the **Rewind** tool over the thumbnails. As you do so, each of the views is displayed on the canvas.

3 Release the mouse button to return to the desired view.

**TIP** Click the **Rewind** wedge once to rewind a single view only.

**To orbit the view of the model**

1 Click and hold the **Orbit** wedge.

The mouse pointer changes to the **Orbit** tool and the **Pivot** is displayed.

2 Drag the **Orbit** tool in any direction to change the view.

**NOTE** If you redefined the center of rotation using the **Center** tool, the camera will orbit around that point. If you did not redefine the center of rotation, the camera will orbit around the default **Pivot** location.

3 Release the mouse button to exit the **Orbit** tool.

**See also:**

Use the 3D SteeringWheels (page 77)

## Change 3D Views with the Tour Building Wheel

The **Tour Building Wheel**, one of the Easy Wheels, contains tools used to conduct a virtual walk-through. The **Tour Building Wheel** is only available when 3D content is displayed on the canvas



Tour Building Wheel

**Tour Building Wheel Wedges**

| Wedge | Description |
|---|---|
| **Forward** | Move the camera forward within the model. |
| **Look** | Turn the camera to look in any direction without moving the camera. |
| **Rewind** | Return to a previous view. |
| **Up/Down** | Change the elevation of the camera within the model. |

**IMPORTANT** Saving to **My Views** retains display changes, such as cross sections, field of view, layers, lighting, and 3D object movements and rotations.

**To display the Tour Building Wheel**

1   On the **Canvas toolbar**, click the **SteeringWheel** drop-down.

**2** Select **Tour Building Wheel.** 🖳

The wheel appears and follows the mouse pointer on the canvas.

**To move the camera forward**

**1** Click and hold the **Forward** wedge.

A target sphere is displayed on the surface under the mouse pointer.

**NOTE** The target sphere only appears when the mouse pointer is over an object. When the pointer is not over the model, there is no reference point for the camera to move toward.

**2** Drag the mouse pointer to move the camera toward, or away from, the target sphere.

A vertical slider provides an indication of how far from the start position the camera has been moved.

**TIP** You can move the slider beyond both the Surface and Start points.

**3** Release the mouse button, when you have moved the camera the desired distance, to exit the Forward tool.

**To look around the view without moving the camera**

**1** Click and hold the **Look** wedge.

The mouse pointer changes to the **Look** tool.

**2** Drag the **Look** tool in any direction to point the camera in that direction.

**TIP** On the SteeringWheel tab in the **Options** dialog, you can invert the vertical axis for the **Look** tool.

**3** Release the mouse button to exit the **Look** tool.

**To return to a previous view**

**1** Click and hold the **Rewind** wedge.

A series of thumbnails is displayed. New thumbnails are created each time you release the mouse button when using any 3D SteeringWheel.

**2** Move the **Rewind** tool over the thumbnails. As you do so, each of the views is displayed on the canvas.

**3** Release the mouse button to return to the desired view.

**TIP** Click the **Rewind** wedge once to rewind a single view only.

**To change the camera elevation**

1 Click and hold the **Up/Down** wedge.

A vertical slider is displayed.

2 Drag the mouse pointer to increase or decrease camera elevation.

**NOTE** If you are viewing a model of a multistory building, the **Up/Down** tool passes through floors and ceilings.

3 Release the mouse button to set the camera elevation.

**See also:**

Use the 3D SteeringWheels (page 77)

SteeringWheels Tab (Options Dialog Box) (page 250)

## Change 3D Views with the Full Navigation Wheel

The Full Navigation Wheel, which is intended for more advanced reviewers, combines the all the tools of the two Easy Wheels. You can use this wheel to examine 3D objects or conduct a virtual walk-through of architectural models. The Full Navigation Wheel is only available when 3D content is displayed on the canvas.



**Full Navigation Wheel**

**Full Navigation Wheel Wedges**

| Wedge | Description |
|---|---|
| **Zoom** | Dynamically zoom the view. |
| **Orbit** | **Orbit** the view of the object. |
| **Center** | Set a new center point around which the model rotates using the **Orbit** tool. |
| **Walk** | Move the camera within the model. |
| **Look** | Turn the camera to look in any direction without moving the camera. |
| **Up/Down** | Change the elevation of the camera within the model. |
| **Rewind** | Return to a previous view. |
| **Pan** | Move the view parallel to the screen. |

**IMPORTANT** Saving to **My Views** retains display changes, such as cross sections, field of view, layers, lighting, and 3D object movements and rotations.

**To display the Full Navigation Wheel**

1   On the **Canvas toolbar**, click the **SteeringWheel** drop-down.

2   Select **Full Navigation Wheel**.

The wheel appears and follows the mouse pointer on the canvas.

**To zoom the view**

1   Click and hold the **Zoom** wedge.

The mouse pointer changes to the **Zoom** tool.

2   Drag the **Zoom** tool upward to zoom in dynamically, or downward to zoom out dynamically.

3   Optional: Click the **Zoom** wedge once to zoom in incrementally.

**WARNING** The **Full Navigation WheelZoom** tool also sets a new **Pivot** location.

**4** Release the mouse button to exit the **Zoom** tool.

**TIP** Press and hold Shift and click the **Zoom** wedge once to zoom out incrementally.

**To zoom the view without changing the Pivot location**

■ Press and hold Ctrl and click the **Zoom** wedge.
The view zooms incrementally in toward the current **Pivot** location.

**To orbit the view of the object**

**1** Click and hold the **Orbit** wedge.
The mouse pointer changes to the **Orbit** tool and displays the **Pivot** location.
The **Pivot** location may differ from the default if you set a new target with the **Center** tool, or if you used the **Full Navigation WheelZoom** tool.

**2** Drag the **Orbit** tool to move the camera view around the **Pivot**.

**NOTE** When viewing the interior of an architectural model, you may find it easier to use **Zoom**, **Pan**, **Walk**, or **Look** tools to change the view.

**3** Release the mouse button to exit the **Orbit** tool.

**To change the Pivot location using the Center wedge**

**1** On the **Full Navigation Wheel**, click and hold the **Center** wedge to display the **Pivot** location.
The mouse pointer changes to the **Center** tool.

**NOTE** The **Pivot** sphere only appears when the mouse pointer is over an object. When the tool is not over geometry, a circle with a line through it is displayed.

**2** Drag the **Pivot** to the location around which you would like to orbit.

**3** Release the mouse button to change the **Pivot** location.
The view pans to show the new **Pivot** location at the center of the canvas.

**TIP** You can also change the **Pivot** location by clicking the **Zoom** wedge.

The new **Pivot** location will be used the next time you orbit the model using the **Orbit** tool, the **ViewCube**, or the **Orbit** wedge on one of the 3D **SteeringWheels**.

**NOTE** You can restore the original **Pivot** location by right-clicking the **SteeringWheel** and choosing **Restore Original Center**.

**To move the camera**

1 Click and hold the **Walk** wedge.

The mouse pointer changes to the **Walk** tool.

2 Drag the mouse pointer in any direction to move the camera. For example, drag upward to walk forward, or downward to walk backward.

**TIP** You can set whether the **Walk** tool is constrained to the ground plane on the SteeringWheels tab in the **Options** dialog box.

3 Release the mouse button to exit the **Walk** tool.

**Change the movement speed**

You can change the speed at which you move through a model when using the **Walk** tool.

**NOTE** The **Walk** tool must be active to change the movement speed.

■ **To increase or decrease walk speed**

   ■ Right click the SteeringWheel and select **Increase Walk Speed** or **Decrease Walk Speed**.

**To change the camera elevation while using the Walk tool**

1 While using the **Walk** tool, press Shift to display the **Up/Down** slider.

2 Drag up or down to change the elevation of the camera.

**TIP** Make minor camera height changes while walking by pressing the up or down arrows.

**To look around the view without moving the camera**

1  Click and hold the **Look** wedge.

   The mouse pointer changes to the **Look** tool.

2  Drag the **Look** tool in any direction to point the camera in that direction.

   **TIP** When the **Look** tool is enabled, you can move the camera by pressing the arrow keys.

3  Release the mouse button to exit the **Look** tool.

**To change the camera elevation**

1  Click and hold the **Up/Down** wedge.

   A vertical slider is displayed.

2  Drag the mouse pointer to increase or decrease camera elevation.

   **NOTE** If you are viewing a model of a multistory building, the **Up/Down** tool passes through floors and ceilings.

3  Release the mouse button to set the camera elevation.

**To return to a previous view**

1  Click and hold the **Rewind** wedge.

   A series of thumbnails is displayed. New thumbnails are created each time you release the mouse button when using any 3D SteeringWheel.

2  Move the **Rewind** tool over the thumbnails. As you do so, each of the views is displayed on the canvas.

3  Release the mouse button to return to the desired view.

   **TIP** Click the **Rewind** wedge once to rewind a single view only.

**To pan the view**

1  Click and hold the **Pan** wedge.

   The mouse pointer changes to the **Pan** tool.

2  Drag the **Pan** tool to move the view parallel to the screen.

3  Release the mouse button to exit the **Pan** tool.

# Control the Appearance of 3D Objects

## Change the Visibility of Objects and Subobjects

You can change the visibility of objects or subobjects by hiding them, making them transparent, or isolating them. When you change the visibility of an object, the icon in the Model palette and the object itself on the canvas reflect the change.

| Model Palette Icons | Description |
|---|---|
|  | **Hide.** The selected objects are not visible. |
|  | **Hide Others.** Only the selected objects are visible. |
|  | **Transparent.** The selected objects are faintly visible. |
|  | **Invert Selection.** Click the objects that you do not want selected. All the others are selected. |

**To change the visibility of an object**

■ In the **Model** palette or on the canvas, right-click an object or subobject and select **Hide**, **Hide Others**, or **Transparent**.

On the canvas, the object is shown with the desired effect. In the **Model** palette, the object icon also reflects the change.

**To show all hidden objects in the model**

■ In the **Model** palette, right-click and select **Show All**.

■ On the canvas, right-click and select **Show All Objects**.

On the canvas, all hidden objects are shown as originally published. In the Model palette, the object icons reflect the change.

## Control Lighting Effects for 3D Objects

Design Review provides some predefined lighting schemes that vary in color and intensity. These lighting effects are intended to make it easier to discern 3D objects when displayed in Design Review. Only one lighting effect can be applied to a model at a time.

| Lighting Effect | Description |
| --- | --- |
| **Default Lights** | Enables a common set of lighting values. These values are applied unless **Published Lights** were provided by the authoring application. |
| **Headlamp** | Enables a single bright light from the front. |
| **Published Lights** | Enables lighting effects created in the authoring application. If no lights were published by the authoring application, the **Published Lights** option is disabled. |
| **No Lights** | Disables all lighting effects. The model is shaded with flat rendering. |
| **Legacy Lights\*** | Only displayed when the open DWF file contains previously supported lighting effects from an earlier version of Design Review. |

**\*Legacy Lights** cannot be applied to the displayed model.

Lighting effects persist only as long as the DWF file is open in Design Review. If you exit Design Review and reopen the same file, or open the same file in a separate instance, you will have to reapply your preferred lighting effect. You can, however, save a view with applied lighting effects using or by creating a markup.

**NOTE** When printing the DWF file or the currently loaded sheet, any lighting effect applied during the current session will be applied to the printed output.

**IMPORTANT** Saving to **My Views** retains display changes, such as cross sections, field of view, layers, lighting, and 3D object movements and rotations.

**To change the lighting effect**

1   Click **Home** tab ➤ expand the **View** panel.

The current lighting effect is shown on the **Lighting Effects** drop-down list. 

2   From the **Lighting Effects** drop-down list, select the desired lighting effect.

The selected lighting effect is applied to the model.

**See also:**

## Shade 3D Objects

Objects are shaded by default.

**IMPORTANT** Saving to **My Views** retains display changes, such as cross sections, field of view, layers, lighting, and 3D object movements and rotations.

**To change the shading of objects**

1   Click **Home** tab ➤ **View** panel ➤ **Shading/Edges** drop-down.

2   Select the desired shading option.

| Tool | Description |
| --- | --- |
|  | **Shaded**. Shades the objects with a smoother, more realistic appearance. |
|  | **Edges Only**. Displays objects with lines and curves. |

| Tool | Description |
| --- | --- |
|  | **Shaded with Edges**. Combines the shading and edges. |

**See also:**

Control Lighting Effects for 3D Objects (page 92)

Save Shading Changes as a My View (page ?)

## View Shadows for 3D Objects

Design Review can show shadows for 3D models. When you view a 3D model in Design Review, you can enable shadows to enhance your understanding of the object being reviewed.

By default, shadows are disabled. When enabled, shadows are visible for all items displayed on the canvas. If you choose to hide objects or subobjects, or to make some parts transparent, the shadows displayed on the canvas reflect this choice.

The angle from which the shadows are cast is fixed and relative to the model. So when the light direction option is set to Top, the shadows are cast from the direction that is the "top" of the object as it was published. When viewing an object in Design Review, the object's published "top" could be the side or the bottom face of the object.

If you have set the current model to view **Edges Only**, no shadows are displayed. Select **Shaded** or **Shaded with Edges** to see shadows.

---

**NOTE** If shadows are enabled when printing the DWF file, shadows are included in the print output.

---

**To show or hide 3D shadows**

1  Click **Home** tab ➤ expand the **View** panel.

2  Click **Drop Shadows**.

Repeat this step to restore the shadows to their previous setting.

**See also:**

# Pull Apart 3D Models

## Move and Rotate 3D Objects

Design Review enables you to move and rotate 3D objects using the **Move &**

**Rotate** tool.

By pulling a model apart, you can better view an object or see how an object fits into the larger model.

---

**WARNING**   Design Review does not share a common WCS (World Coordinate System) with AutoCAD and Inventor. In Design Review Y is up, in AutoCAD and Inventor Z is up.

---

The **Move & Rotate** tool remains active. To use it again, click another object. If you click outside an object, the tripod is not visible because you have not selected an object. Once you click an object, the tripod is displayed again. The **Move & Rotate** tool also remains active after using the **Print**, **Copy Current View**, **Fit to Window**, **Previous View**, and **Next View** tools. To end the use of the **Move & Rotate** tool, click another tool or press Esc.

---

**IMPORTANT**   Saving to **My Views** retains display changes, such as cross sections, field of view, layers, lighting, and 3D object movements and rotations.

---

**TIP**   Keep the tripod slightly oblique to the screen to facilitate moving or rotating the selection.

---

**To move a 3D object**

1   Click **Tools** tab ➤ **3D Tools** panel ➤ **Move & Rotate**.

The mouse pointer changes to the **Move & Rotate** tool.

**TIP** You can also right-click the canvas and select **Move & Rotate**.

**2** In the **Model** palette or on the canvas, click the object or objects that you want to move.

**3** Drag the selection in any direction. If multiple objects are selected, drag the origin of the first object to move the entire selection.

**TIP** You can also use the arrow keys to move the view left, right, up, or down.



**Begin move**

**End move**
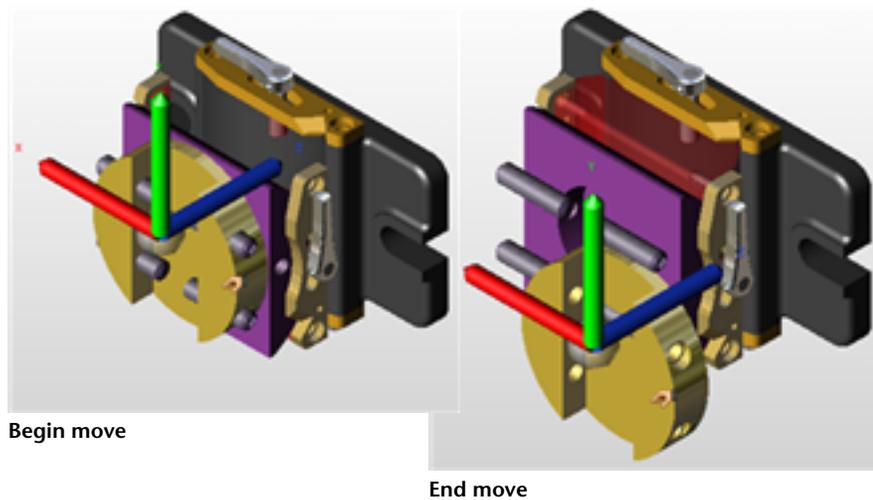
**To move a 3D object along an axis**

**1** Click **Tools** tab ➤ **3D Tools** panel ➤ **Move & Rotate**.

The mouse pointer changes to the **Move & Rotate** tool.

**TIP** You can also right-click the canvas and select **Move & Rotate**.

**2** In the **Model** palette or on the canvas, click the object or objects that you want to move.

**3** On the axis along which you want to move the object, click that axis near the origin.

**4** Drag the axis in either direction to move the selection.

**TIP** You can also use the arrow keys to move a selected object along an axis.



**Begin move**                    **End move**
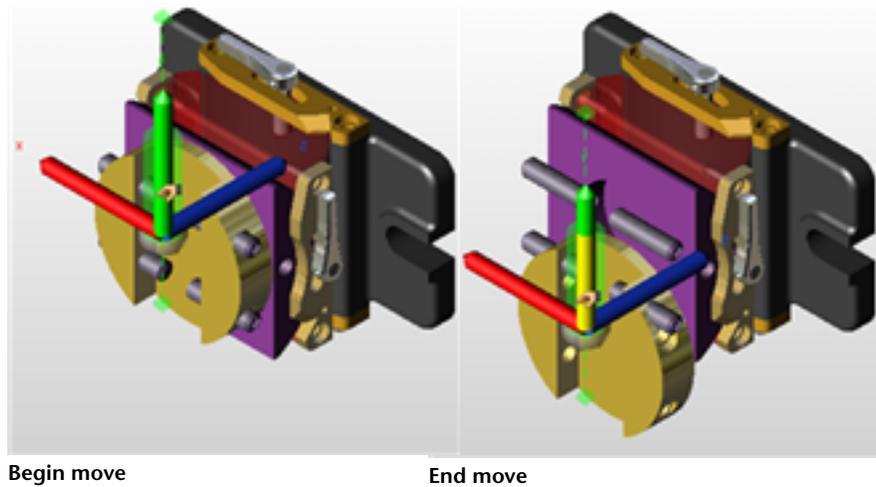
**To move a 3D object within a plane**

1   Click **Tools** tab ➤ **3D Tools** panel ➤ **Move & Rotate**.

    The mouse pointer changes to the **Move & Rotate** tool. 

    **TIP** You can also right-click the canvas and select **Move & Rotate**.

2   In the **Model** palette or on the canvas, click the object or objects that you want to move.

3   Rollover a plane defined by two axes until an indication of a plane with arrows is shown, and click.

4   Drag the selection in any direction.

**TIP** To see this feature more clearly, click **Home** tab ➤ expand the **View** panel, and click **Perspective**.



**Begin move**

**End move**
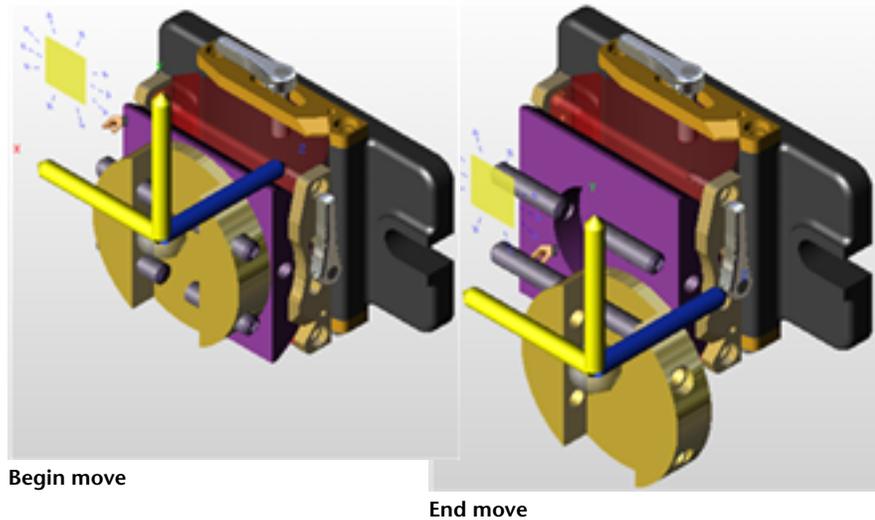
**To move a 3D object parallel to the screen**

1   Click **Tools** tab ➤ **3D Tools** panel ➤ **Move & Rotate**.

    The mouse pointer changes to the **Move & Rotate** tool.

    **TIP** You can also right-click the canvas and select **Move & Rotate**.

2   In the **Model** palette or on the canvas, click the object or objects that you want to move.

3   Click the tripod origin and drag the selection in any direction.

**RELATED** If you only want to move a single object parallel to the screen, you can click the part (to select it) and drag it immediately.



**Begin move**



**End move**
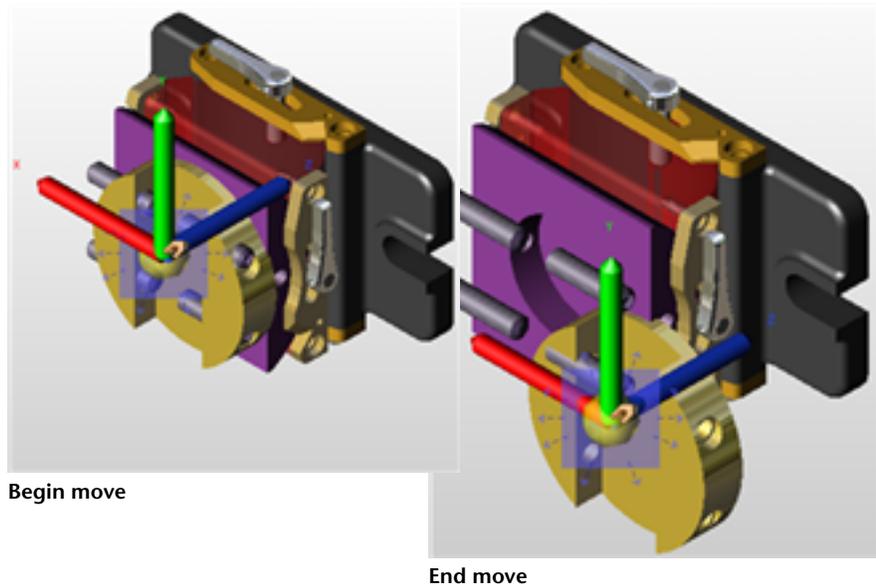
**To rotate a 3D object**

1   Click **Tools** tab ➤ **3D Tools** panel ➤ **Move & Rotate**.

The mouse pointer changes to the **Move & Rotate** tool.

**TIP** You can also right-click the canvas and select **Move & Rotate**.

2   In the **Model** palette or on the canvas, click the object or objects that you want to rotate.

3   On the axis around which you want to rotate the object, click near the end of the axis.

4   Drag the selection around the axis.

**TIP** After clicking the end of the desired axis, use the Up and Down Arrows to rotate objects. Pressing and holding **Shift** while using the Up and Down Arrows or dragging the mouse rotates the object in 45° increments.



**Begin rotation**          **End rotation**
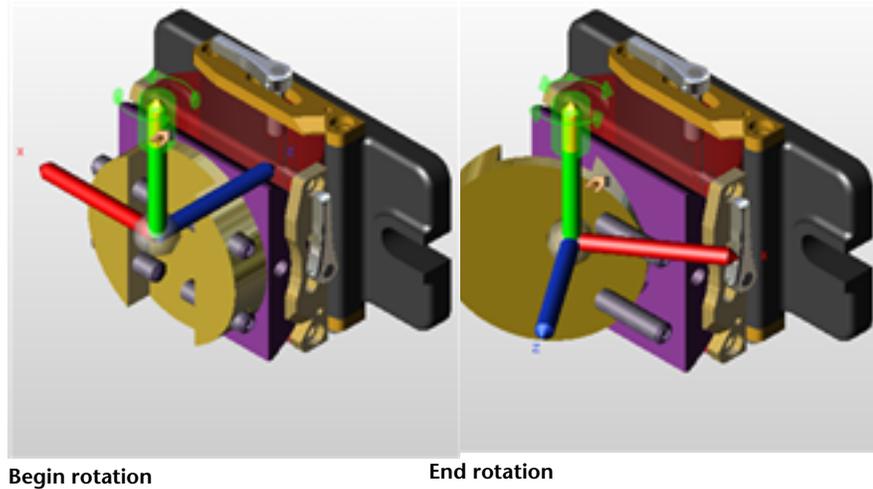
Once a DWF file is closed, moves and rotations are not saved.

**To save a view of a moved or rotated object**

- Save a view using My Views.
- Add a markup. The view can then be accessed from the Markups palette.

**See also:**

Reset 3D Objects (page 101)
About Coordinate Systems (page 201)
Use the Arrow Keys to Move and Rotate (page 274)
Save 3D Object Movement and Rotation Changes as a My View (page ?)
Markup DWF Files (page 143)

# Reset 3D Objects

After changes have been made to parts of a model, it is common to want to see a model the way it was originally published. View the original positions by resetting one object at a time or by resetting the entire model all at once. You have a few choices to reset 3D objects.

**To return one 3D object to its original position**

- In the **Model** palette, right-click a moved object and select **Reset**.
- With the **Move & Rotate** tool active, double-click a moved object on the canvas to reset it to its original position.
- Or, with a moved object selected, on the **Model** palette toolbar, click the

  Palette Options button  and select **Reset**.

**To return all 3D objects in a model to their original positions**

- In the **Model** palette, right-click the top-level assembly and select **Reset**.
- Or, with the top-level assembly selected, on the **Model** palette toolbar,

  click the Palette Options button  and select **Reset**.
- Right-click the ViewCube and select **Starting View**.

# View Cross Sections of a 3D Model

## Cross Section 3D Models

A cross section is a cut-away view of an object. Cross sections enable you to see inside 3D objects. You can create a cross section by cutting through a model or object using the section plane. The transparent section plane is the actual on-screen interface you can move to create a cross section. When you begin a cross section, a cross section tripod and section plane are displayed. The tripod enables you to move the section plane.

The cross sectioning tools can create a **Section Face**, **XY Section**, **YZ Section**, and a **XZ Section**, each representing a plane defined by two of the three tripod axes.

Design Review, AutoCAD, and Inventor do not share a common WCS (World Coordinate System). In Design Review, Y is up. In AutoCAD and Inventor, Z is up.

**TIP** Keep the tripod slightly oblique to the screen to facilitate moving or rotating the selection.

**To cross section a 3D model on a face**

1 Click **Tools** tab ➤ **3D Tools** panel ➤ **Section Face**.

The mouse pointer changes to the **Section Face** tool.

2 Click the desired model surface to create the cross section.

The section plane is applied where you click the model. The mouse pointer changes to the Modify Cross Section tool.
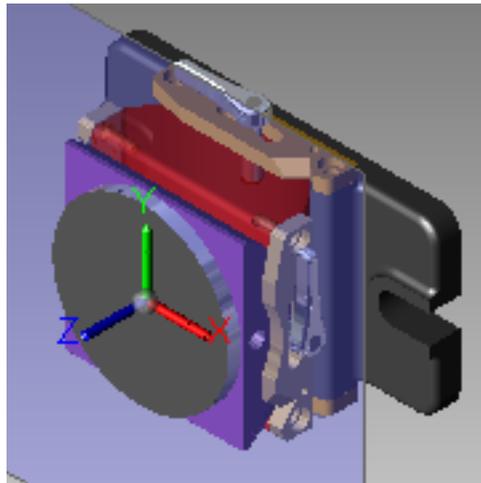


3 Optional: Drag the tripod to position the section plane as needed.

The resulting section is added to the **Cross Sections** palette. The first section you create is listed under **My Cross Sections** as **Cross Section 1**.

**To cross section a 3D model on a plane**

1  Click **Tools** tab ➤ **3D Tools** panel.

2  Select the desired cross section plane type: **XY Section** , **XZ Section** , **YZ Section**.

   The section plane cuts the model in half to reflect the section plane type

   and the mouse pointer changes to the Modify Cross Section tool.

3  Drag the tripod to position the section plane as needed.

   The resulting cross section is added to the **Cross Sections** palette. The first section you create is listed under **My Cross Sections** as Cross Section 1.

You can create numerous cross sections on a model, which are numbered sequentially, such as Cross Section 2, Cross Section 3, and so on. When creating multiple cross sections, only the currently selected section plane is visible. The other section planes are not visible, but the effects of them (the cross sections) remain visible.

---

**IMPORTANT** Saving to **My Views** retains display changes, such as cross sections, field of view, layers, lighting, and 3D object movements and rotations.

---

**See also:**

## Move and Rotate Section Planes

You can change the cross section revealed, or move or rotate a section plane. To move or rotate the section plane, position the mouse pointer over the tripod, or between the axes. Hot spots appear, each allowing you to move the section plane in a different way.

**To move a section plane**

1  In the **Cross Sections** palette, select the cross section you want to move.

   The section plane and tripod are shown.

**2** On the tripod, click the origin.

**3** Drag the origin in any direction.

   **TIP** You can also use the arrow keys to move the section plane left, right, up, or down.
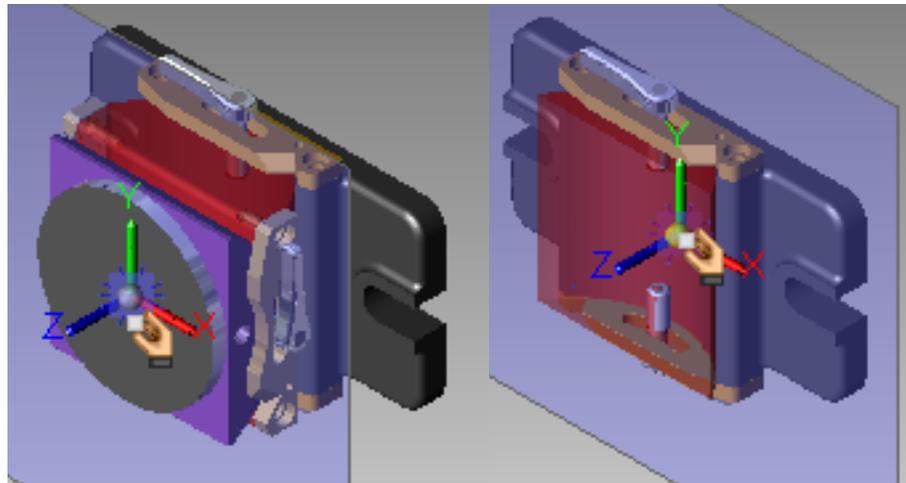


**Begin move**                                         **End move**

**To move a section plane along an axis**

**1** In the **Cross Sections** palette, select the cross section you want to move.
   The section plane and tripod are shown.

**2** On the tripod, click the desired axis near the origin.

**3** Drag the axis in either direction along the axis.

**TIP** You can also use the arrow keys to move the section plane left, right, up, or down.



**Begin move**                    **End move**
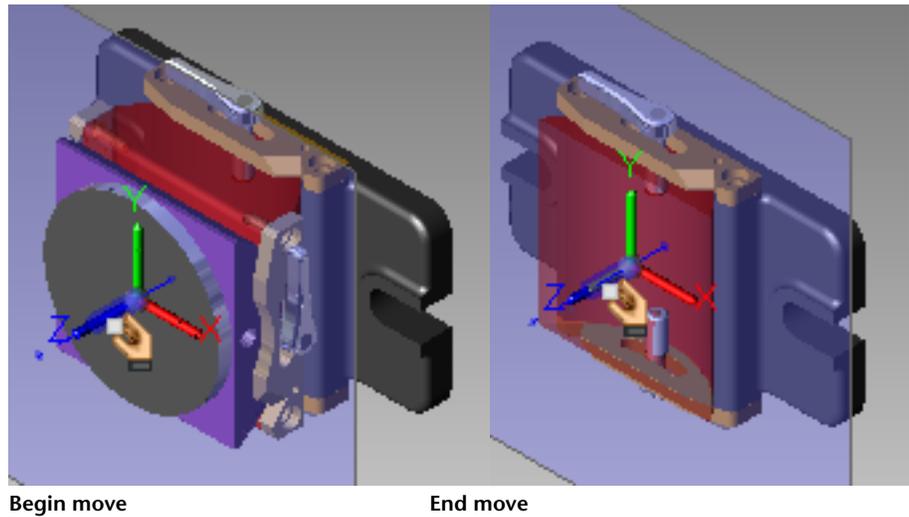
**To move a section plane within a plane**

1   In the **Cross Sections** palette, select the cross section you want to modify.

    The section plane and tripod are shown.

2   Rollover a plane defined by two axes until an indication of a plane with arrows is shown, and click.

3   Drag the section plane in any direction.

**TIP** You can also use the arrow keys to move the plane left, right, up, or down.



**Begin move**                    **End move**
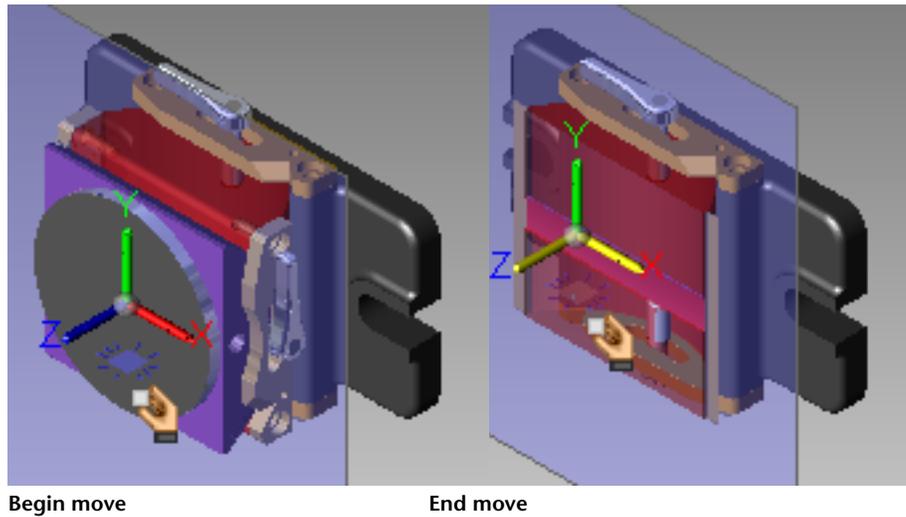
**To rotate a section plane**

1   In the **Cross Sections** palette, select the cross section you want to modify.

    The section plane and tripod are shown.

2   On the axis around which you want to rotate the plane, click near the end of the axis.

3   Drag to rotate the section plane around the selected axis.

**TIP** You can also use the arrow key to rotate the section plane.



**Begin rotation**                    **End rotation**
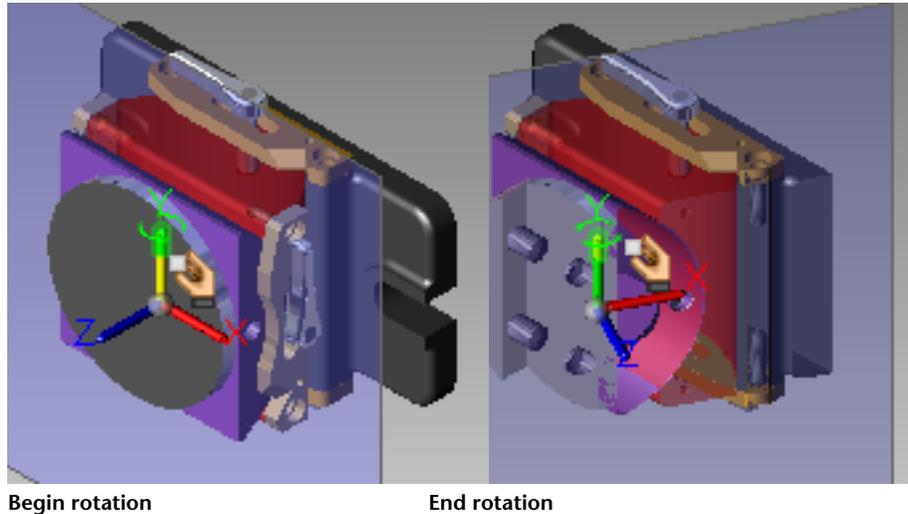
**RELATED** If you press and hold Shift while using the arrow keys to rotate, the section plane rotates in 45° increments.

**IMPORTANT** Saving to **My Views** retains display changes, such as cross sections, field of view, layers, lighting, and 3D object movements and rotations.

**See also:**

Use the Arrow Keys to Move and Rotate (page 274)

Save Move and Rotation Changes as a My View (page ?)

## Flip Cross Sections

After you create a cross section, you can flip it for a different view of the object.

**IMPORTANT** Saving to **My Views** retains display changes, such as cross sections, field of view, layers, lighting, and 3D object movements and rotations.

**To flip a cross section**

■ In the **Cross Sections** palette, right-click the desired cross section and select **Flip**.

The section plane flips.

**See also:**

## Hide or Show a Section Plane

By default, a section plane (the plane that cuts the object) and its tripod are shown.

**IMPORTANT**  Saving to **My Views** retains display changes, such as cross sections, field of view, layers, lighting, and 3D object movements and rotations.

**To hide a section plane**

■ In the **Cross Sections** palette, right-click the desired cross section and select **Hide**.

The section plane and the tripod are hidden, leaving the cross section visible.

**TIP**  To hide all cross sections, on the ViewCube click the Home button.

**To show a section plane**

■ In the **Cross Sections** palette, right-click the hidden cross section and select **Hide** again.

The section plane and the tripod are shown.

**See also:**

## Control Cross Section Display

In addition to hiding and showing a section plane for a cross section, you can hide both the section plane and the cross section from view at the same time.

**IMPORTANT** Saving to **My Views** retainsretains display changes, such as cross sections, field of view, layers, lighting, and 3D object movements and rotations.

**To hide a cross section and its section plane**

■ In the **Cross Sections** palette, next to the cross section to be hidden, click

the light bulb icon. 

The section plane and the tripod are hidden.

**To show a cross section and its section plane**

■ In the **Cross Sections** palette, next to the cross section you want to show,

click the light bulb icon. 

The section plane and the tripod are shown.

By default, all cross sections are shown as they are made.

**To hide all cross sections**

■ In the **Cross Sections** palette, right-click **My Cross Sections** and select
**Active**.

All cross sections are hidden.

**To show all cross sections**

■ In the **Cross Sections** palette, right-click **My Cross Sections** and select
**Active**.

All cross sections are shown.

## Control Caps Display

A cross section slices through objects showing a flat surface, or cap, across all objects. The sectioning tools cap all cross sections by default. Uncapping cross sections shows objects as if they were hollow.

**IMPORTANT** Saving to **My Views** retains display changes, such as cross sections, field of view, layers, lighting, and 3D object movements and rotations.
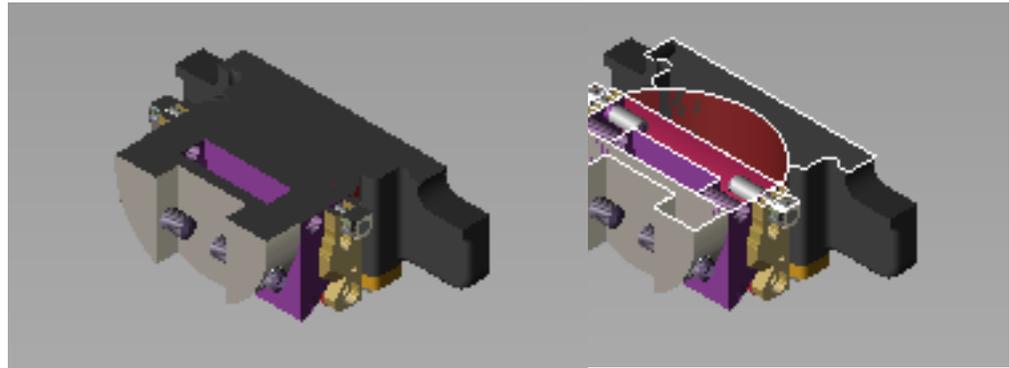


Capped cross section                    Uncapped cross section

**To uncap cross sections**

■ In the **Cross Sections** palette, right-click **My Cross Sections** and select **Cap**.

The cross sections are uncapped and hollow spaces are visible.

Repeat this step to cap the cross sections.

**To view a cross section parallel to the screen**

■ In the **Cross Sections** palette, right-click the desired cross section and select **Viewpoint**.

The object on the canvas is panned and zoomed so that section plane is parallel to the screen.

## Rename a Cross Section

Each cross section you create is added to the Cross Sections palette under My Cross Sections. By default they are named Cross Section 1, Cross Section 2, and so on.

**To rename a cross section**

**1** In the **Cross Sections** palette, right-click the desired cross section and select **Rename**.

The **Rename Cross-Section** dialog box opens.

**2** Enter a new name for the cross section and click **OK**.

The new cross section name is displayed under My Cross Sections.

## Reset a Section Plane

When you manipulate a section plane, after creating it, you can quickly reset it to its original position.

**To reset a section plane**

■ In the **Cross Sections** palette, right-click the desired cross section and select **Reset**.

The section plane appears as it was originally placed.

**To reset all section planes**

■ In the **Cross Sections** palette, right-click **My Cross Sections** and select **Reset**.

**To delete a cross section**

■ In the **Cross Sections** palette, right-click the desired cross section and select **Delete**.

The selected cross section is deleted.

**To delete all cross sections on the model**

■ In the **Cross Sections** palette, right-click **My Cross Sections** and select **Delete All**.

All cross sections are deleted.

**TIP** If you delete a cross section by mistake, you can retrieve it by clicking **Undo** on the Quick Access toolbar.

# View Animations in 3D DWF Files

## About Animations in DWF Files

Design Review allows you to view animations and assembly instructions, if published, created by Autodesk Inventor. Animations allow downstream reviewers to observe the details of assembly and/or component objects more closely and see how and in what order they fit together. To view assembly instructions, display the **Text Data** palette.

Animations are listed in the **Views** palette under **Published Views ➤ Presentations**. When you click an animation title, Explosion 1 in the example below, the Views palette is extended to display the animation chapters and sequences; and the animation begins playing. The labels for each view, chapter, and sequence are defined by the DWF publisher and cannot be changed.
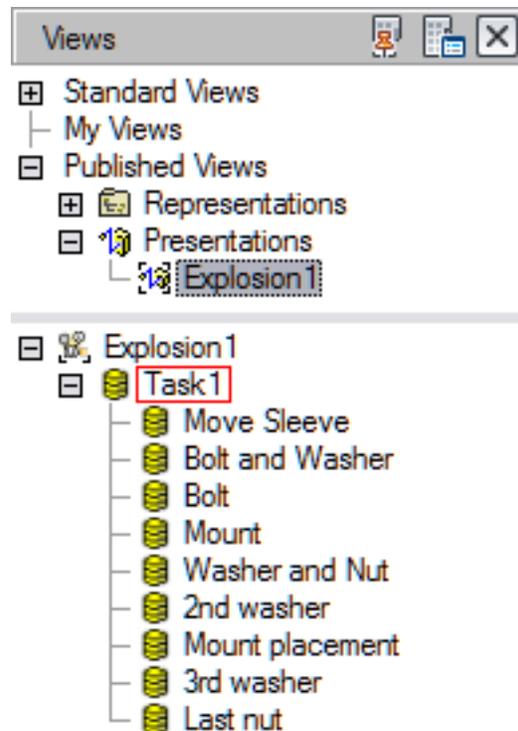
**The Views palette, extended after selecting an animation**

**To expand an item in the tree list**

■ Next to an item in the tree list, click the plus button (**+**). The tree item is expanded and its children are shown in the tree list.

**To collapse an item in the tree list**

■ Next to an item in the tree list, click the minus button (**-**). The tree item is collapsed and its children are no longer visible in the tree list.

**Related Products**

*Autodesk® Navisworks®* can help you produce AVI files from animations.

**See also:**

View Tabular Data (page 123)

Use Palettes  (page 20)

# About Animation Tools

When a sheet (3D model) that is selected in the **Thumbnails** or **List View** palette contains an animation, the conditional **Animation** tab is displayed in the Design Review ribbon. Animations can be published to play automatically, active mode, or manually, inactive mode.

If a sheet contains an active animation, the animation begins automatically and the animation tools are active. If the sheet contains more than one animation, or inactive animations, select an animation in the **Views** palette (**Published Views ➤ Presentations**) or, from the **Select Animation** drop-down list on the **Animation** tab ➤ **Settings** panel.

Use the **Animation** tab ➤ **Controls** panel to control animation playback.

| Tool | Description |
| --- | --- |
|  | **Play.** Plays the animation forward. |

| Tool | Description |
|---|---|
| | **Pause.** The animation must be running to use this button. |
| | **Reverse.** Plays the animation backward. |
| | **Next Interval.** Advances the animation one frame at a time. |
| | **Next Sequence.** Jumps to the beginning of the next sequence without playing. |
| | **Play Sequence.** Plays only the selected sequence and pauses at the beginning of the next sequence. |
| | **Previous Interval.** Reverses the animation one frame at a time. |
| | **Previous Sequence.** Jumps to the start of the previous sequence without playing animation. |
| | **Play Sequence Reverse.** Plays the selected sequence backward and pauses at the beginning. |
| | **Loop.** You can set the loop to play continuously or once only within the following play settings:<br>■ **Play**<br>■ **Play All Reverse**<br>■ **Play Sequence**<br>■ **Play Sequence Reverse**<br>■ **Next Interval**<br>■ **Previous Interval**<br><br>You can also click the **Loop** toggle during animation playback to loop the current view or sequence. **By default, looping is off.** |

| Tool | Description |
|------|-------------|
| ▣ | **Camera.** You can turn off/on all published **camera** changes in a DWF file animation.<br>By default, **camera** changes are enabled. |
| ▣ | **Animation Trails.** You can show or hide published *trails (page 285)* during playback. If the publisher did not include trails, the button is unavailable.<br>By default, **trails** are not displayed. |
| ▷▷ Medium ▼<br>▷ Slow<br>▷▷ Medium<br>▷▷▷ Fast | **Speed.** You can set the playback speed of the animation. Select a speed:<br>■ **Slow**<br>■ **Medium** (default setting)<br>■ **Fast**<br><br>See more about changing animation playback speed (page 120). |
| Select Animation ▼ | **Select Animation.** If more than one animation is present in the current sheet, click the **Select Animation** arrow and select an animation to view. |
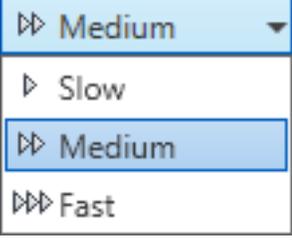
## Start an Animation

Unless the first sheet in the DWF file contains an animation, Design Review does not automatically display the animation tools. When you select a sheet in either the **Thumbnails** palette or the **List View** palette that contains an animation, the **Animation** tab displays, the workspace automatically changes to **Animation** workspace and the first active animation (if more than one exists in the file) begins playing.

If the animation does not play automatically, the model is shown on the canvas in the first frame, or interval, of the animation.

**To start an animation**

■ Click **Animation** tab ➤ **Controls** panel ➤ **Play**. ▣

**See also:**

## View Animations

When a 3D sheet containing an active animation is opened, the animation begins playing by default. However, you can stage the entire animation, a chapter, or a sequence, by clicking the animation, chapter, or sequence name when the extended Views palette is displayed.

**To view an animation from the beginning**

1 If necessary, display the **Views** palette.

2 In the tree list, from **Published Views ➤ Presentations**, select an animation.

3 If necessary, click **Animation** tab ➤ **Controls** panel ➤ **Play**.

The animation begins playing on the canvas.
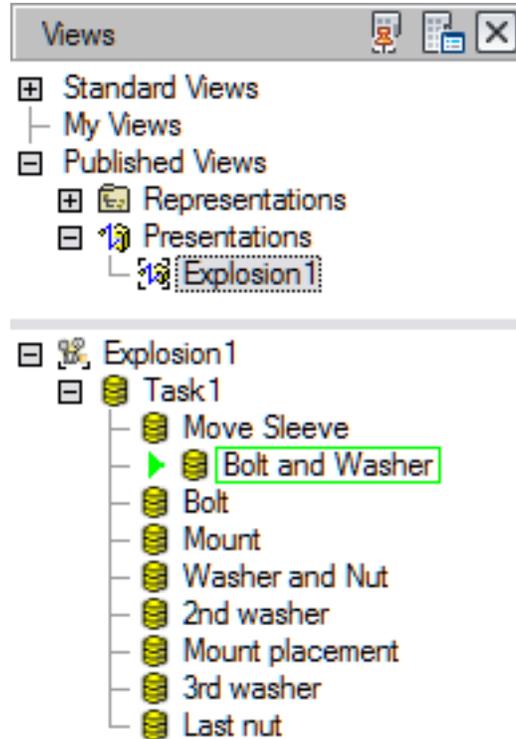


When an animation is running, the sequence being viewed is highlighted within the extended Views palette.

**To view part of a larger animation**

1 In the extended **Views** palette, click the plus button (**+**) next to the name of an item in the tree list.

  The tree item is expanded to display a hierarchical list of chapters and sequences that combine to create the parent animation. Further expand the chapter tree items as needed.

2 Select the chapter or sequence from which you would like to begin viewing the animation.

**3** Click **Animation** tab ➤ **Controls** panel ➤ **Play**.

The animation begins playing on the canvas from the chapter or sequence you selected.

**To view a single sequence only**

**1** Select the sequence to view.

**2** Click **Animation** tab ➤ **Controls** panel ➤ **Play Sequence**.

The selected sequence begins playing on the canvas.

**TIP** You can also play a single sequence by double-clicking the sequence name in the extended **Views** palette.

**To view an entire animation backward**

**1** In the extended **Views** palette, select the last sequence, at the bottom of the **Animation** tree list.

**2** Click **Animation** tab ➤ **Controls** panel ➤ **Reverse**.

The animation begins playing in reverse.

---

**IMPORTANT** During animation playback, some Design Review features are disabled. The ribbon buttons that enable these features are unavailable.

---

For a complete list of animation control buttons and a description of each, see About Animation Tools (page 113).

## Markup Animations

Adding markup to an animation is like adding markup to other 3D DWF files except that the animation cannot be running.

**To markup an animated 3D DWF**

**1** Click **Animation** tab ➤ **Controls** panel ➤ **Pause**.

**2** Click **Markup and Measure** ➤ **Callouts** panel ➤ **Rectangle Callout**.

The mouse pointer changes to a crosshair.

**3** Place the mouse pointer over the model where you want to begin the leader line.

**4** Click and drag the label to the desired location and click again to set the label position.

**5** Type the comment text in the label. The label expands to accommodate the text.

**6** Click outside the label to complete the callout on the canvas and to display the label text under the sheet name in the **Markups** palette.

**7** Click **Animation** tab ➤ **Controls** panel ➤ **Play** to continue animation playback.

---

**IMPORTANT** When you continue animation playback after adding markup, your markups will no longer be displayed. Access markup applied to animations in the **Markups** palette.

---

**See also:**

**To take a snapshot of an animation**

**1** Click **Animation** tab ➤ **Controls** panel ➤ **Pause**.

**2** Click **Tools** tab ➤ **Create Sheet** panel ➤ **From Snapshot**.

**3** Move and resize the snapshot capture window as necessary.

**4** Click the **Capture** button to finish the snapshot.

A 2D Snapshot sheet is added to the **Thumbnails** and **List View** palettes. This sheet is also displayed on the canvas so you can add markup.

You can rename your snapshot.

**See also:**

## Change How an Animation Is Displayed

You can use various tools of Design Review to change the view while an animation is running.

Once you have made an animation sequence active in the **Views** palette, you can use the **Pan**, **Zoom**, **Zoom Rectangle**, **Orbit**, **Turntable**, or **Cross Section** tools to interact with the animation.

Changes you make using these tools remain in effect until the animation calls for an object movement or camera change.

■   If you move an object while the animation is paused, or before playing the animation, the object reappears in its original position when the sequence that includes that object begins.

■   If you change your view of the animation, during playback or while paused, your view is lost when the animation advances to the next chapter or sequence. To maintain your view changes, disable camera changes (page 121).

Use the **Settings** panel on the **Animation** tab to enhance your viewing experience.

### Change the Animation Speed

You can change the speed at which an animation runs. The default speed for animation playback is **Medium**. **Slow** plays the animation at 1/3 the default speed. **Fast** plays the animation at three times the default speed.

**To change the animation speed**

1   Click **Animation** tab ➤ **Controls** panel ➤ **Speed** drop-down list.

2   Select **Slow**, **Medium**, or **Fast**.

### Enable or Disable Looping

Set Design Review to automatically replay the animation. By default, looping is disabled.

**To enable or disable animation looping**

■ Click **Animation** tab ➤ **Controls** panel ➤ **Loop** ⬚ to enable automatic replay of the animation.

■ Click **Loop** again to disable automatic replay.

**Disable or Enable Camera Changes**

Occasionally, you may want to disable the automatic camera changes called for in an animation. By default, camera changes are enabled.

**To disable or enable animation camera changes**

■ Click **Animation** tab ➤ **Controls** panel ➤ **Camera** ⬚ to disable animation camera changes.

■ Click **Camera** again to enable the published camera changes.

**Show or Hide Trails**

You may find it helpful to see the movement *trails (page 285)* of objects while viewing an animation. By default, **trails** are not displayed.

**To enable or disable object trails in animations**

■ Click **Animation** tab ➤ **Controls** panel ➤ **Animation Trails** ⬚ to enable trails in the animation.

■ Click **Animation Trails** again to disable trails in the animation.

Although you can change the look and orientation of an object while using the animation viewer, Design Review cannot save changes to animations. When you close the program, the changes you made are lost.

**See also:**

Save a View (page ?)

# About Viewing Assembly Instructions

Assembly instructions are attached to individual sequences in an animation by the DWF publisher. They explain, step by step as the animation advances,

how to create the currently loaded assembly. They can include text instructions and parts lists and are meant for use in a manufacturing setting to provide clear and concise instructions in conjunction with Design Review's View Animations (page 116) feature. If the publisher does not include assembly instructions, you cannot create them in Design Review.

When an animated DWF file with assembly instructions is opened in Design Review, the instructions are displayed for the current task or sequence in the **Text Data** palette.

---

**IMPORTANT**  Although loading a DWF file may populate the **Text Data** or **Grid Data** palettes, these palettes may not be displayed automatically. Display palettes manually by clicking **Home** tab ➤ **Workspace** panel ➤ **Show/Hide Palettes** drop-down list.

---

In Design Review, you can set whether palettes display automatically on the **Options** dialog box ➤ **General** tab in the **Automatic Palette Launching** group.

Depending on the current workspace layout, the text and grid data palettes may be displayed unpinned at the edge of the canvas. If necessary, place the mouse pointer over the **Text Date** or **Grid Data** tab to display the palette, and click the lock button to keep the palette displayed.

The **Text Data** palette displays text such as step-by-step instructions for assembly.

The **Grid Data** palette displays data in list or table formats such as a parts list or a Bill of Materials.

---

**NOTE**  In the **Grid Data** palette, the appearance and behavior of a BOM that accompanies an animation differs from a stand-alone BOM table. With an animation, only the parts that move during a task, or sequence, are displayed.

---

Selecting an animation chapter or sequence displays the published assembly instruction for that part of the animation in the **Text Data** palette and stages that part of the animation on the canvas. Parts corresponding to that instruction are shown in the **Grid Data** palette.

**See also:**

General Tab (Options Dialog Box) (page 245)

Manipulate Palettes (page 20)

View Tabular Data (page 123)

# View Tabular Data

## About Tabular Data

Design Review can display a table of information about the parts within an assembly that may include quantities, names, costs, vendors, and other details someone building the assembly might need. This data may be a Bill of Materials ( *BOM (page 281)* ) or a more generic parts list. This type of tabular data is typically used by design, purchasing, and manufacturing personnel to control production and track changes.

In Design Review, you can view a 2D drawing or 3D model while simultaneously viewing tabular data. Suppliers, contractors, fabricators, and manufacturers can print tables or, using Design Review, mark them up using the **From Grid** and markup tools.

## About Tables

When a DWF file is published with tabular data, the table is formatted according to the complexity of the designed object. Published tabular data may be one of two types:

- **H Grid Table.** A hierarchical table displays expandable parent/container items that may contain still more expandable items. You can move items which are at the same level, within the same parent, but you cannot change the level (promote or demote) of an object. This type of table is commonly used for BOM information.

- **Grid (Flat) Table.** A table in which all items are at the same level (non-hierarchical). You can move items within a flat table by dragging and dropping. Flat tables are more commonly used for parts lists.

When you select an item in a table, whether a single part or an assembly, that item is also selected in the **Model** palette and on the canvas. Additionally, when an object is selected on the canvas or in the **Model** palette, the part is scrolled to (in larger tables) and highlighted in the table.

---

NOTE  If the selected part is small or an interior component, it may not be apparent that it is also selected on the canvas. In the **Model** palette, right-click the part and select **Hide Others** to display only the selected part on the canvas.

---

**See also:**

## View Tabular Data

If the **Grid Data** palette is not already displayed, set up the Design Review workspace to view tabular data.

**To view tabular data**

■ In the **Thumbnails** or **List View** palette, click a table or a named Bill of Materials.

The **Grid Data** palette opens below the canvas and displays the table. The canvas is resized, but continues to display the current sheet or model.

**NOTE** You may need to resize the **Grid Data** palette.

**To hide or show the Grid Data palette**

1 Click **Home** tab ➤ **Workspace** panel ➤ **Show/Hide Palettes**.
2 Select **Grid Data**.

The **Grid Data** palette opens.

**To expand an item in a tree list**

■ In a tree list, to the left of a tree item, click the plus sign (**+**).

The tree item is expanded and its children items are shown in the tree list.

When you select an item in the table, either an individual component or an entire subassembly, it is also selected on the canvas and in the Model palette. If the table you are viewing is linked to a 2D sheet, clicking an item in the table automatically pans and zooms the sheet to display that part on the canvas.

**To collapse an item in a tree list**

■ In a tree list, to the left of a tree item, click the minus sign (-).

The tree item is collapsed and its children items are hidden in the tree list.

You can rearrange rows in the table, but you cannot change the level of an item. For example, you cannot promote a child part to the level of a parent

assembly or demote a parent to the level of a child; child parts cannot be moved into another parent assembly.

**To move table rows**

■ Drag and drop rows up or down.

**To move table columns**

■ Drag and drop column headers left or right.

**To hide or show columns**

■ Right-click a column header and select columns to display in the table. A check mark indicates that a column is shown. Click a column title to clear the check mark and hide the column.

**To resize a column**

1 Place the mouse pointer over the line that separates column headers until the mouse pointer changes to a horizontal, double-headed arrow.

 ┿

2 Drag the mouse pointer left or right to resize the column.

 **RELATED** To change column width to fit the content, double-click the separator bar to the right of the column heading.

**To change the sort order of a column**

■ Click once on the header of the column you want to sort.

If you have modified the format of the **Grid Data** palette while viewing a table, such as changing the position, width, or visibility of columns, or the order in which the rows are displayed, the view settings for that table persist until you exit Design Review. Any other table in the same DWF file uses the default view settings.

Format changes to the Grid Data palette are not persistent across reviewing sessions, and are lost when you exit Design Review.

**Hyperlinks in Tables**

Publishers may include hyperlinks in table cells that either correspond to a published *iPart (page 283)* or open a sheet or model from the Thumbnails palette.

Clicking on the hyperlink performs the associated action.

**See also:**

Manipulate Palettes (page 20)

Search Autodesk Seek (page 55)

Use Published Hyperlinks (page 55)

## Markup Tabular Data

Design Review enables you to capture tabular data to a new, separate sheet for markup purposes using the **From Grid** tool. Unlike the **From Snapshot** tool, the **From Grid** tool captures a picture only of the **Grid Data** palette, and does not require you to set the snapshot size. A table must be loaded in the **Grid Data** palette to enable the **From Grid** tool.

---

**IMPORTANT** Resize the **Grid Data** palette to display the information you want to capture before creating the snapshot.

---

**To markup tabular data**

- Click **Tools** tab ➤ **Create Sheet** panel ➤ **From Grid**.
  The new snapshot DWF sheet is displayed on the canvas and is added as the last sheet in the **Thumbnails** and **List View** palettes.

**See also:**

Markup Basics (page 143)

## Print Tabular Data

Design Review provides the option to print tabular data.

**To print tabular data**

1   In the **Thumbnails** or **List View** palette, select the table you want to print.

2   Click application button ➤ **Print** ➤ **Print**. 

    **TIP** You can also right-click the table in either the **Thumbnails** or **List View** palette and select **Print**.

    The **Print** dialog box opens and the selected table is shown in the **Preview** area.

3   Optional: Select the desired print options.

    **TIP** If you have changed the view of the table, such as changing the sort order or the visibility or width of columns, under **Print Range**, from the **View** drop-down list, select **Current View** to print the table as it is displayed in Design Review. To print the table in its default state, from the **View** drop-down list, select **Full Page**.

4   Click **OK**.

When you first print a table, the print settings persist for the current session. When you exit Design Review, your preferred table print settings are discarded.

**See also:**

Print an Open File (page 223)
Alternative Methods for Performing Commands (page 261)

# View Georeferenced Maps

## About Georeferenced Maps

A georeferenced map is a sheet within a DWF file published by Autodesk® Map 3D 2008 or later that contains a global coordinate system and defined latitude and longitude coordinates based on the WGS84 *datum (page 282)* . In Design Review 2008 or later, sheets with a published coordinate system can interact with *GPS (page 283)* devices that use the *NMEA 0183 (page 284)* protocol.

Not all DWF files contain map coordinate information. For a DWF sheet to have map coordinates, the publisher must ensure specific conditions.

1 The source DWG file must have a coordinate system assigned to it.

2 The coordinate system must be valid for the data of the map. For example, a coordinate system for Canada does not support converting X/Y values to latitude and longitude for a map of Thailand.

3 The Publish command must be used to create the DWF file. Plotting to DWF does not work. Only the content on the Model tab can be published with coordinates.

**NOTE** If you are experiencing difficulties with published georeferenced maps, verify that the DWF file contains a published coordinate system and defined latitude and longitude coordinates. Also verify that your GPS device is set for NMEA output and WGS84 coordinates. For more information, review the documentation that came with your GPS device.

**See also:**

GPS Tab (Options Dialog Box) (page 249)

## About Map Tools

The Map toolbar can be used to invoke common map-related commands, to view current coordinates, or to enter specific coordinates.


**Map toolbar**

The Map toolbar is a conditional toolbar because it is only available when a georeferenced map is displayed on the canvas.

**Map Toolbar**

| Tool | Description |
| --- | --- |
|  | **Map Menu**. Displays all available georeferenced map tools. Select a command: <br> ■ **GPS Mode**. <br> ■ **Center to Coordinates**. |

| Tool | Description |
|------|-------------|
|  | ■ **Copy Coordinates**. Copies both the latitude/longitude or X/Y coordinates based on the mouse pointer's last position over the map.<br><br>■ **Paste Coordinates**. In Entry Mode, you can paste both the copied latitude/longitude or X/Y coordinates.<br><br>■ **Units and Systems**. A check mark indicates the coordinate system currently in use.<br>   ■ The published coordinate system.<br>   ■ **Lat/Long - Degrees, Minutes, Seconds**.<br>   ■ **Lat/Long - Decimal Degrees**.<br><br>■ **Enter Coordinates**. Switches the Map toolbar between **Display Mode** and **Entry Mode**. Only in **Entry Mode** can you type or paste specific coordinates. **Entry Mode** only supports decimal format. So published coordinates and Lat/Long coordinates must be entered in decimal values. |
|  | **GPS Mode**. Starts GPS tracking and centers the map to the coordinates provided by GPS device. The My Coordinates icon indicates the position. Adding any markup to a georeferenced map disables **GPS Mode**. |
|  | **Center to Coordinates.** The map centers on the entered coordinates, and the Coordinate icon is shown over the entered coordinates. **Center to Coordinates** disables **GPS Mode** each time coordinates are entered and **Center to Coordinates** is clicked. The Coordinate icon is not saved or printed. |
|  | **Lat/Long or X/Y (Display Mode)**. Displays the current latitude (North/South), longitude (East/West), or X/Y position of the mouse pointer in the selected units and coordinate system. In Display Mode, coordinates can be copied from, but cannot be entered or pasted into, the Map toolbar. |
|  | **Lat/Long or X/Y (Entry Mode)**. Enables you to enter a specific latitude (North/South), longitude (East/West), or X/Y position in decimal degrees format into the Map toolbar. |

| Tool | Description |
|---|---|
| | For the Lat/Long coordinate systems, the **Select North or South** and **Select East or West** drop-down lists enable you to select the quadrants for the entered coordinates. |
| | **Zoom Ratio**. Displays a ratio of one unit to display units. The **Zoom Ratio** changes when zooming the map. |

## Use a Georeferenced Map

You can use a georeferenced map to view published map coordinates as you move the mouse pointer over the map or to identify your current location.

### Use a Georeferenced Map without a GPS Device

To view published map coordinates, you must have Design Review 2008 or later installed. No GPS device is required.

**To view published map coordinates**

1   Display the georeferenced map on the canvas.
2   Move the mouse pointer over the map.

   The current coordinates of the mouse pointer are shown on the Map toolbar.

**To center on coordinates**

1   Display the georeferenced map on the canvas.
2   Move the mouse pointer over the map to the desired coordinates.
3   Right-click and select **Copy Coordinates**.

   Both the latitude and longitude or X/Y positions are copied.

4   Click **Map Menu**  and select **Enter Coordinates** to change the Map toolbar from **Display Mode** to **Entry Mode**.

   TIP  To switch back and forth between **Display Mode** and **Entry Mode**, double-click the background of the Map toolbar.

**5** In Entry Mode, click **Map Menu**  and select **Paste Coordinates**.

If the coordinates were copied from the canvas or the Map toolbar, the coordinates are pasted into both text boxes.

If the coordinates were copied from another program, **Paste Coordinates** is disabled. **Paste** the latitude and longitude separately.

**6** Optional: If you must change the quadrants for the entered coordinates latitude and longitude, select the desired quadrants from the **Select North or South** and **Select East or West** drop-down lists.

**7** On the Map toolbar, click **Center to Coordinates**. 

The map centers on the entered coordinates, and the **Coordinate** icon

 is shown over the entered coordinates.

**TIP** Press Ctrl+Shift+J to quickly center the map to the coordinates below the mouse pointer.

**8** Optional: To switch back to Entry Mode, click **Map Menu**  and select **Enter Coordinates** again.

Once in **Entry Mode**, individual coordinates can also be typed or pasted into the Map toolbar. The coordinates must be in decimal degrees format and must be entered separately in the appropriate text boxes. If a coordinate is invalid, the **Center to Coordinates** command does not work.

Right-clicking in either the **Lat/Long** or **X/Y** text boxes enables you to perform common editing commands such as **Undo**, **Cut**, **Copy**, **Paste**, Delete, and **Select All**. Some of these commands are disabled when the Map toolbar is in **Display Mode**.

**Use a Georeferenced Map with a GPS Device**

To identify your current location, in addition to having Design Review2012 installed, you must also have a supported GPS device configured and connected, so that it can interact with Design Review.

**To configure and connect to a GPS device**

**1** If necessary, open a DWF file containing a georeferenced map and display the map on the canvas.

**2** Click the application button ➤ **Options**.

The **Options** dialog box opens.

**3** Select the **GPS** tab.

**4** Select the connection.

- Select **Automatically Scan All Ports for My GPS Device** to have the computer locate the first GPS device and select the connection for you.

- Select **Manually Specify Connection Port for My GPS Device** to select a particular port. Then, from the **Port** drop-down list, select the port where the GPS device is installed.

**5** From the **Set GPS Refresh Interval** drop-down list, select the frequency for the GPS device to refresh the current position on the georeferenced map.

**6** Click **Connect** to start the GPS device.

The GPS Device Connection Status message box opens.

Reposition the message box or click **OK** to close it. The current status is always displayed on the **GPS** tab in the **Options** dialog box.

**NOTE** If you are having difficulty connecting to a GPS device, verify that it is a supported device (page 7) and that it is properly installed.

**7** Optional: By default the **Use This Connection at Startup** option is checked, so the GPS device will be connected and ready the next time you start Design Review. To disable the GPS device until you connect it in the **Options** dialog box, uncheck the **Use This Connection at Startup** check box.

After you have configured the installed GPS device and established a connection, in **GPS Mode**, you can use a georeferenced map to identify your current location. In **GPS Mode**, as the GPS device moves, the georeferenced map moves based on the GPS refresh rate interval that you set during configuration.

The My Coordinates icon is always centered on the canvas. If the coordinates of your current location are not on the first sheet, Design Review automatically attempts to load the correct georeferenced map, if it is available. When **GPS Mode** is disabled, the **My Coordinates** icon is no longer displayed on the georeferenced map.

**NOTE** If a GPS device is connected but not detected, the GPS device must be configured. If no signal is detected, the **My Coordinates** icon displays a question mark.

Any markup can be added to a georeferenced map, but doing so turns off **GPS Mode**. You can use 2D measure tools for most georeferenced maps. However, if a map does not contain a published coordinate system and the units are latitude and longitude, the measure-related tools are disabled.

**To identify your current location on a georeferenced map**

1 Display the georeferenced map on the canvas.

2 If necessary, configure and connect to the GPS device.

3 On the Map toolbar, click **GPS Mode**. 

The My Coordinates icon  indicates your current location on the georeferenced map.

**Going Beyond Georeferenced Map Boundaries**

When viewing areas near the edges of the georeferenced map, either in **GPS Mode** or using **Center to Coordinates**, white space is displayed for areas that exceed the published map coordinates. If an action, such as **GPS Mode** or entered coordinates, attempts to go beyond the current map coordinates, Design Review looks for the coordinates on other maps in the open DWF file.

■ **Coordinates found in only one map.** If the coordinates are found only on one map in the open DWF file, the found coordinates are displayed on the matching map.

■ **Coordinates found in more than one map.** If the coordinates are found on several maps in the open DWF file, a dialog box opens and you are prompted to select the desired map and click OK. The selected map displays the coordinates. If in **GPS Mode**, clicking **OK** leaves **GPS Mode** enabled. Clicking **Cancel** to close the dialog box disables **GPS Mode**.

■ **Coordinates not found in the open DWF file.** If the coordinates are not found on any map in the open DWF file, a message box indicates that coordinates could not be found. If in **GPS Mode**, clicking OK to close the message box disables **GPS Mode**.

**See also:**

Alternative Methods for Performing Commands: Georeferenced Maps (page ?)

# Publish DWF Files

## About Publishing Non-DWF Files

Creating a DWF file from another file format is referred to as publishing, because the original file contents are published into a single, new DWF file. Many Autodesk and non-Autodesk products have built-in DWF publishing capabilities. To learn to use a program to publish a DWF file, see the program's help file.

### About DWF Writer

If a program does not have built-in DWF publishing capabilities, use the free Autodesk® DWF™ Writer program. With DWF Writer installed, you can publish 2D and 3D DWF files from nearly any program.

DWF Writer enables you to standardize on one file format, so you can exchange project information with extended teams. DWF also enables you to take advantage of DWF integration in other Autodesk design, collaboration, and data management solutions.

For the best DWF publishing results, use a program's built-in publishing capabilities instead of DWF Writer.

**See also:**

## Publish a New DWF File from Windows Explorer

You can publish a new DWF or DWFx file from a non-DWF file directly from Windows Explorer or from the desktop. Some supported, non-DWF file formats include: text files, PDF files, Word documents, Excel workbooks, and PowerPoint presentations.

To publish DWF files from non-DWF files, the program that originally created the file must be installed and it must have built-in DWF and DWFx publishing capabilities.

If that program does not have built-in publishing capabilities, the computer attempts to use Autodesk DWF Writer if it is installed. (Autodesk DWF Writer 2008 does not publish DWFx files; the latest version of DWF Writer is required.) If DWF Writer is not installed, you are notified where to download it.

---

**WARNING** If Autodesk Inventor 11 or earlier is installed, right-clicking Inventor files does not display either the Publish DWF or Publish DWFx command. This feature may not be compatible with 64-bit operating systems.

---

**To publish a new DWF file from Windows Explorer or the desktop**

1 Display the folder that contains the non-DWF file to be published.

Only one non-DWF file can be published at a time.

2 Specify the format you want to publish.
   ■ Right-click the non-DWF file and select **Publish DWF** to publish a DWF file.

   ■ Right-click the non-DWF file and select **Publish DWFx** to publish a DWFx file.

The non-DWF file opens in its original program and the **Save DWF File As** dialog box opens.

3 Optional: Select a location to store the DWF file.

4 Optional: In the **File Name** text box, type a name for the DWF file.

5 Click **Save**.

The original program closes, and the published DWF file opens in the default DWF viewing program.

**See also:**

About DWF Writer (page 134)

Publish and Email a New DWF File from Windows Explorer (page 234)

# Get Design Review Plug-ins

Plug-ins are small programs that provide Design Review with additional features. Currently, three plug-ins are available:

- DGN Import Plug-in: Enables Design Review to access DGN files.

- JT Import Plug-in: Enables Design Review to access JT files.

- Autodesk® Freewheel® plug-in: Enables you to share DWF files on the Autodesk Project Freewheel website.

**To find Design Review plug-ins**

- Click **Home** tab ➤ **Assistance** panel ➤ **Help** drop-down ➤ **Get Plug-ins**.

    **NOTE** If the Autodesk Freewheel plug-in is not yet installed, click the application

    button ➤ **Save As** ➤ **Save to Freewheel**  to go to the download location.

Each plug-in must be downloaded and installed after Design Review. Once a plug-in has been installed, restart Design Review to enable the new functionality.

**See also:**

About Embedding DWF Files (page 240)
Design Review Support (page ?)
Save a DWF File to Freewheel (page 215)

# Compose DWF Files

## About Composing DWF Files

Composing a DWF file in Design Review refers to either creating a DWF file by combining content from existing DWF files, or modifying an existing DWF file by adding, reordering, or deleting sheets. The resulting DWF file is referred to as a composite DWF file. If content being combined includes tabular data,

animations, or measure- or print-disabled sheets, the composite DWF file inherits this information.

You can use either the **Thumbnails** or **List View** palette when composing DWF files. The **Thumbnails** palette is convenient when combining DWF files and deleting sheets, while the **List View** palette is convenient when reordering and renaming sheets.

**Related Products**

*Autodesk® Navisworks®* can help you combine multiple files.

**See also:**

# Combine DWF Files

You can combine existing DWF content several ways.

■ Add entire DWF files to an open DWF file

■ Merge two or more DWF files into a new DWF file

■ Drag sheets between open DWF files

When combining DWF content with DWFx content, certain conditions apply.

■ Combining DWFx content with an open DWF file, converts the DWFx content to DWF

■ Combining DWFx content with disablements with an open DWF file result in an error

■ Combining DWF content with an open DWFx file, converts the DWF content to DWFx

■ Combining files in a new DWF file converts the combined content to the default DWF Format as defined in the Options dialog box

■ In Windows Explorer or on the desktop, you cannot use the Merge right-click menu command to combine DWF files with DWFx files

When you first start Design Review, you can begin combining DWF files immediately.

**To create a DWF file**



■ Click the application button ➤ **New**.

If an open DWF file was changed, you are prompted to save it.

**NOTE** **New** is not available when viewing an embedded DWF file.

A new empty file is shown on the canvas. The new file type is based on the default **DWF Format** setting on the **General** tab of the **Options** dialog box. The new file cannot be saved until sheets are added.

**To add entire DWF files to an open DWF file**

1   In Design Review, create a DWF file or open an existing one to receive the other DWF files.

2   From Windows Explorer or the desktop, select one or more DWF files.

3   Drag the selection over the **Thumbnails** or **List View** palette of the receiving DWF file.

4   In the **Thumbnails** or **List View** palette of the receiving DWF file, drop the selection. (Any password-protected DWF file requires the password before it can be added.)

Copies of all sheets from the selection are added to the receiving DWF file. The original DWF files remain unchanged.

In Windows Explorer or on the desktop, the Merge right-click menu command is only available when Design Review is installed and the selected file types can be merged. You can merge DWF files with DWF files and DWFx files with DWFx files. However, you cannot use the Merge right-click menu command to merge: DWF files with DWFx files, password-protected DWF files, defective DWF files, or DWF files created before 1998.

**To merge two or more DWF files into a new DWF file**

**WARNING** This feature may not be compatible with 64-bit operating systems.

1   In Windows Explorer or on the desktop, open the folder that contains the DWF file or files to be merged.

2   Select two or more DWF files.

**TIP** To merge DWF files from multiple locations, use the Search Companion in Windows Explorer to find the desired DWF files.

**3** In the selection, right-click the DWF file you want to be listed first in the new DWF file and select **Merge**.

The **Save Merged File** dialog box opens.

**4** Optional: Select a location to save the merged DWF file.

**5** Optional: In the **File Name** text box, type a name for the new DWF file.

**6** Click **Save**.

A message box opens notifying you that the merge was successful.

**7** Click **OK**.

**To drag sheets between open DWF files**

**1** In Design Review, create a DWF file or open an existing one to receive the sheet or sheets to be copied.

**2** Start a second instance of Design Review.

**3** In the second Design Review window, open the DWF file that contains the sheet or sheets to be copied.

**4** From the **Thumbnails** or **List View** palette of the second window, select the sheet or sheets to be copied.

**5** Drag the selection from the second window over the **Thumbnails** or **List View** palette of the receiving DWF file in the first window.

WARNING  Do not drop the selected sheet or sheets on to the canvas of the receiving DWF file. Doing so causes Design Review to create a DWF file.

**6** In the **Thumbnails** or **List View** palette of the receiving DWF file in the first window, drop the selection. (Any password-protected DWF file requires the password before it can be added.)

Copies of the selected sheets are added to the receiving DWF file. The original DWF file remains unchanged.

**Related Products**

*Autodesk® Navisworks®* can help you combine multiple files and avoid duplicating data.

**See also:**

# Reorder Sheets within a DWF File

Once you have combined DWF files, you can arrange the sheets in a different order.

**To reorder sheets within a DWF file**

1. In the **Thumbnails** or **List View** palette, select the sheet or sheets to be reordered.
2. Drag the selection in the palette.

   As you drag the selection, use the guide line that appears in the palette to help position the selection in the desired location. The palette scrolls automatically as needed.
3. Drop the selection in the new location.

**TIP** If you move a sheet by mistake, on the Quick Access toolbar, click **Undo**.

**See also:**

Select Items (page 17)

# Create a New 2D Sheet by Taking a Snapshot

You can take a screen capture, or snapshot, of anything on your screen, inside or outside of the Design Review window. Create a 2D sheet using the **From Snapshot** tool. You can take a snapshot of a 2D sheet or a 3D model. You can also create a DWF file that includes snapshots which you can use to make a custom symbol catalog.

**NOTE** To maintain high quality when taking a snapshot, zoom in on the item you want to capture first, rather than taking a snapshot and then enlarging the snapshot.

**To create a 2D sheet by taking a snapshot**

1. In Design Review, create a file or open an existing DWF file to contain the snapshot.

**2** Prepare the subject of your snapshot.

■ If the subject of your snapshot is within the open DWF file, show the sheet on the canvas that contains the content you want to capture.

■ If the subject of your snapshot is in another file, open the file and show the sheet on the canvas that contains the content you want to capture.

**3** Click **Tools** tab ➤ **Create Sheet** panel ➤ **From Snapshot**.

The capture window opens.

**4** Optional: If the Design Review window obscures the subject of your snapshot, position the subject on the screen so that it is visible and can be captured. The capture window remains on top.

**5** Optional: Move the capture window by clicking anywhere on the gray bar and dragging it to the desired location.

**6** Optional: Resize the capture window by typing the desired number of pixels in the Width and Height text boxes. You can also place the mouse pointer over one of the edges or corners of the capture window until the mouse pointer changes to a double-headed arrow. Then click and drag the edge or corner to the desired size.

**TIP** As you drag the capture window, press and hold Ctrl to make the capture window square or Shift to maintain the capture window proportions.

**7** On the gray bar of the capture window, click the **Capture** button.

The new snapshot DWF sheet is shown on the canvas and is added as the last sheet in the Thumbnails and List View palettes.

A default paper size is applied to the new sheet according to the best fit of the snapshot onto the standard size set on the computer (Imperial or metric). The scale is set to 1:1.

The next time the **From Snapshot** tool is used, it will open in the location and at the size in which you last used it.

**To cancel a snapshot**

■ On the gray bar of the capture window, click the **Exit** button ⊠ or press Esc.

# Rename a Sheet

Once you have combined DWF files, or created a snapshot, you can rename a sheet.

**To rename a sheet**

1   In the **Thumbnails** or **List View** palette, right-click the sheet to be renamed and select **Rename**.

    **TIP** You can also double-click the sheet to be renamed.

2   Type the new sheet name.

3   Press Enter or click away from the sheet.

**WARNING** Renaming a sheet breaks all incoming hyperlinks and bookmarks that may target that sheet.

# Delete Sheets from a DWF File

Once you have combined DWF files, you can delete one or more sheets.

**To delete sheets from a DWF file**

1   In the **Thumbnails** or **List View** palette, select the sheet or sheets to be deleted.

2   Right-click the selection and select **Delete**.

    A warning dialog box opens.

3   To continue deleting the selection, click **OK**.

**TIP** If you delete a sheet by mistake, on the **Quick Access** toolbar, click **Undo**.

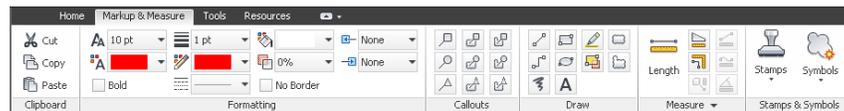# Markup DWF Files

## Markup Basics

### About Markup

Markup generically refers to all objects you add to a DWF file during the review process. Markups share some common traits when reviewing, commenting, or redlining DWF files during the feedback process.

There are several types of markup.

- Callouts
- Shapes
- Text boxes
- Highlighters
- Measurements
- Stamps
- Custom symbols

Markups can be added to sheets displayed on the canvas using the **Markup & Measure** ribbon tab. The markup tools available vary depending upon the type of content being displayed. For instance, some markup tools are used specifically for 2D content. When markups are created, they retain canvas view settings active at the time, such as zoom levels, cross sections, field of view changes, and 3D object movements and rotations. These settings are shown whenever the markups are selected.



**The Markup & Measure tab**

The **Markup & Measure** tab is divided into panels. Each panel contains tools grouped by task.

- **Clipboard**
- **Formatting**
- **Callouts**

- **Draw**
- **Measure**
- **Stamps & Symbols**

The **Markups** palette lists all markups in the DWF file organized by sheet. Clicking a markup in the **Markups** palette displays the markup at the zoom level it was created on the canvas and in the **Markup Properties** palette.

**See also:**

## About Markup-Disabled DWF Files

In addition to disabling measurement and printing, designers using Autodesk® Inventor® 2008 or later can disable markup options for some or all sheets or models in the published DWF file. If a sheet or model is markup-disabled, you cannot change disabled content. You may, however, be able to insert additional markup, depending upon the published markup settings.

Unlike measure- and print-disablements, markup-disabled content has two tiers.

- **Fully disabled.** Prevents any markups from being created, edited, or deleted. All markup-related tools are disabled. Existing markups are protected.

- **Partially disabled.** Prevents existing markups from being edited or deleted, but allows new markups to be added to the DWF file. If you select existing markups, the Cut and Delete commands are disabled. (Existing markups can be copied.) Markup tools are enabled because new markup can be created, edited, and deleted until the reviewer closes the DWF file. Once the DWF file is saved and closed, the newly added markup becomes existing markup; the next time the DWF file is opened that markup cannot be edited or deleted.

---

**NOTE** If a file contains disablements, a lock icon  is shown on the **Canvas** toolbar and in the **Restrictions** column of the **List View** palette.

---

## About Markup Properties

Each markup has a set of properties associated with it.

- **Label.** For the selected markup, type a new label to be shown in the **Markups** palette, without changing the selected markup on the canvas.

- **Status.** Identify the status of a markup. Choose from **<None>**, **For Review**, **Question**, and **Done**. The selected **Status** determines the color of the markup on the canvas.

- **Lock Markup.** Indicates the locking status of the selected markup or markups.

- **New Note.** Type comments, details, or remarks about the selected markup. The next time the file is opened, typed notes are displayed under History.

- **History.** Shows notes and status changes saved in the last markup session.

- **Markup Info.** Click the plus sign (+) next to **Markup Info** to display additional details about the markup, such as **Created By** (the name of the person who made the markup), **On** (the date and time the markup was created), **Last Modified** (the date of the last change), and **Sheet** (the name of the sheet that contains the markup).

When you select a markup in the **Markups** palette, the appropriate sheet is displayed on the canvas, and the view returns to the view settings that were active when the markup was created.

## Control Markup Display

You can hide all markups in a DWF file to see the underlying content. Hiding markup on the canvas does not hide it in the **Markups** palette.

By default, markups are shown.

**To hide markups on the canvas**

- Click **Home** tab ➤ **View** panel ➤ **Show Markups**.

To show all markups again, repeat this step or select a markup in the Markups palette.

**See also:**

Markup Settings (page 245)

## Secure Markups

Design Review helps prevent accidental changes and deletions by enabling you to lock and unlock markups. Locking a markup prevents several actions:

■ Cutting locked markups

■ Deleting locked markups

■ Moving locked markups

■ Modifying locked markup text on the canvas

■ Adding and deleting leaders from locked markups

Not all changes are disabled when a markup is locked. Locked markups do not prevent:

■ Changing locked markup formatting

■ Changing locked markup properties

■ Copying locked markups (pasting a locked markup creates an unlocked copy)

After creating new markups, they remain unlocked. You can manually lock and unlock markups as needed. When a marked-up DWF file is opened, all existing markups are locked.

**Determine Markup Locking Status**

You can determine whether a markup is unlocked or locked several ways.

■ On the canvas, the handles of a selected markup are either yellow, indicating unlocked (left), or gray, indicating locked (right).
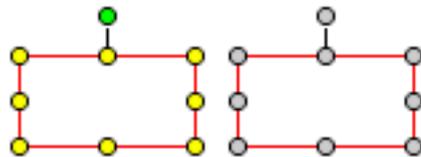
- In the **Markups** palette, to the left of each markup, a lock icon indicates whether a markup is unlocked or locked.

- In the **Markup Properties** palette, for the selected markup the **Lock Markup** option is unchecked (unlocked) or checked (locked).

**To lock or unlock a markup**

1 On the Canvas toolbar, click **Select**.

   The **Select** tool is active.

2 On the canvas or in the **Markups** palette, select the desired markup object.

3 To lock the markup,
   - In the **Markups** palette to the left of the markup name, click the unlocked icon.

   - In the **Markup Properties** palette, check **Lock Markup**.

   - Or, on the canvas, right-click the markup and select **Lock**.

   The selected markup is locked.

4 To unlock the markup,
   - In the **Markups** palette to the left of the markup name, click the locked icon.

   - In the **Markup Properties** palette, uncheck **Lock Markup**.

   - Or, on the canvas, right-click the markup and select **Lock**.

     **TIP** You can also double-click a locked markup on the canvas to unlock it.

   The selected markup is unlocked.

   Markup selection handles on the canvas and the lock icon in the **Markup Properties** palette change to reflect the new locking status.

---

**TIP** You can also lock or unlock multiple markups at the same time by selecting the markups, right-clicking, and choosing **Lock**.

## Manipulate Markup Objects

There are several types of markup objects that you can create on the canvas: Callouts, shapes, text boxes, highlighters, measurements, stamps, and custom symbols. Unless the DWF file has been markup-disabled or secured, markup objects can be manipulated using the similar methods; markups can be selected, moved, resized, rotated, reformatted, cut, copied, pasted, or deleted.

### Select a Markup Object

Selecting individual markup objects enables you to manipulate the object.

**To select a markup object**

1   On the Canvas toolbar, click **Select**.
    The **Select** tool is active.
2   On the canvas or in the **Markups** palette, click the desired markup object.

**To select multiple markup objects**

■   With the **Select** tool active, press and hold Ctrl and click each markup on the canvas or in the **Markups** palette to add it to the selection.

    **TIP** To remove a markup from the selection, Ctrl-click the markup to be removed.

**To select all markup objects on the canvas**

■   Right-click the canvas and click **Select All Markups**.
    All markup objects on the current sheet are selected.

    **TIP** In the **Markups** palette, click the sheet or model name to select all its markups.

**To deselect a selected markup object**

■   Click an empty place on the canvas.

    **TIP** You can also cancel a selection by pressing **Esc**.

**Move a Markup Object**

**To move a markup object on the canvas**

1   On the Canvas toolbar, click **Select**.

    The **Select** tool is active.

2   On the canvas or in the **Markups** palette, select the desired markup.

3   If the markup selection handles are gray, right-click the selected markup and uncheck **Lock**. Only unlocked markup objects can be moved.

    Markup selection handles change from gray to yellow.

4   With the **Select** tool active, place the mouse pointer between the markup handles. (For a callout, place the mouse pointer over the leader line between the handles.)

    The mouse pointer changes to a four-headed arrow.

5   Click and drag the markup object to the desired location and drop it.

**Resize a Markup Object**

**To resize a markup object**

1   On the Canvas toolbar, click **Select**.

    The **Select** tool is active.

2   On the canvas or in the **Markups** palette, select the desired markup.

3   If the markup selection handles are gray, right-click the selected markup and uncheck **Lock**. Only unlocked markup objects can be resized.

    Markup selection handles change from gray to yellow.

4   Drag one of the selected markup handles.

    Dragging a side handle changes markup width; dragging a top or bottom handle changes markup height; dragging a corner handle changes markup

width and height. As you drag a handle, press and hold **Shift** to maintain original markup proportions.
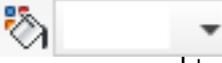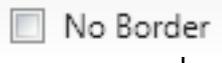
**See also:**

## About Markup Formatting Tools

Markup appearance can be changed using tools on the **Formatting** panel on the **Markup & Measure** tab. Custom symbols are the only markup objects that cannot be formatted in Design Review.

**NOTE** Locked markups can still be formatted.

**Markup Formatting Tools**

| Tool | Description |
|------|-------------|
| ☐ Bold  <br> 🅰 10 pt  ▼  <br> 🅰 🟥 ▼ | t can be formatted using the **Font Size**, **Text Color**, and **Bold** ls. |

| Tool | Description |
|---|---|
| ≡ 1 pt ▼<br>🖉 🟥 ▼<br>▤ —— ▼ | ...es can be formatted using the **Line Weight**, **Line Color**, and ...e **Style** tools. |
| 🎨 ▼<br>🔳 100% ▼<br>☐ No Border | ...can be formatted using the **Fill Color** and **Fill Transparency** ...ls. The **No Border** tool can also be used to turn a markup object ...border on or off. |
| ⊞— None ▼<br>—⊡ None ▼ | ...addition to weight, color, and style, each line can also be ...matted with a different **Line Start Style** and **Line End Style**. |

## Format Markups

Default markup settings, markup color, and markup line weight are the three formatting methods shared by both 2D and 3D markups.

You can set the default formatting for a markup tool, so each new markup, whether a measurement or a callout, will have the same default formatting. Design Review retains markup formatting. You can also change the formatting of existing markups.

**To set the default formatting for a markup tool**

1 Verify that no markup objects are selected.

2 From the **Callouts**, **Draw**, **Measure**, or **Stamps & Symbols** panels, click the markup object type for which you want to set new default formatting.

**3** In the **Formatting** panel, click a format tool to specify the type of formatting to be changed.

**4** Select a format option to set the new formatting.

All new markup of the selected markup type will have this new formatting by default.

**To format existing markups**

**1** On the Canvas toolbar, click **Select**.

The **Select** tool is active.

**2** On the canvas or in the **Markups** palette, select the markup or markups to reformat.

**3** Click a format tool.

**4** Select a format option to apply to the selection.

The new formatting is applied to the selection.

---

**NOTE** Custom symbols cannot be formatted. They retain the formatting of the DWF file in which they were originally created.

---

**Change the Font Size**

Design Review enables you to change the font size of a markup object from **1 pt** to **72 pt**. The default font size is **10 pt**.

**To change the font size**

**1** On the Canvas toolbar, click **Select**.

The **Select** tool is active.

**2** On the canvas or in the **Markups** palette, select the desired text markup or markups.

**3** Click **Markup & Measure** tab ➤ **Formatting** panel ➤ **Font Size** drop-down list.

**4** Select the desired font size.

The new font size is applied to the selection.

**TIP** You can also use different font sizes within the same text markup.

## Set Color, Transparency, and Border Display

For all markup objects, you can control appropriate color settings:

- Text Color
- Line Color
- Fill Color

**To set color**

1 On the Canvas toolbar, click **Select**.

The **Select** tool is active.

2 On the canvas or in the **Markups** palette, select the desired markup or markups.

3 Click **Markup & Measure** tab ➤ **Formatting** panel.

4 Depending on the type of markup selected, click the Text Color drop-down list , Line Color drop-down list , or Fill Color drop-down list.

5 Select a pre-defined or custom color.

The new color is applied to the selection.

For callouts, closed shapes, and text boxes, you can also control fill color transparency.

**NOTE** Rectangle clouds and polyclouds, although closed shapes, do not have fill colors and must have borders.

**To set transparency**

1 On the Canvas toolbar, click **Select**.

The **Select** tool is active.

2 On the canvas or in the **Markups** palette, select the desired callout, closed shapes, or text box markup or markups.

**3** Click **Markup & Measure** tab ➤ **Formatting** panel ➤ **Fill**

**Transparency** drop-down list. 🖼 100% ▼
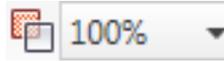
**4** Select the desired transparency percentage.

The new transparency is applied to the selection.

For callouts, closed shapes, and text boxes, you can also control whether or not a border is shown.

**To hide or show a markup border**

**1** On the canvas or in the **Markups** palette, select the desired markup or markups.

**2** Click **Markup & Measure** tab ➤ **Formatting** panel.

**3** Select the desired border display setting.

■ To hide the markup border, check **No Border**.

■ To show the markup border, uncheck **No Border**.

The new border display setting is applied to the selection.

**Change the Line Weight**

You can change the line thickness, or weight, of drawn shapes and measurement markups. The line weight range is between **1/4 pt** and **20 pt**. The default line weight thickness is **1 pt**.

**To change the line weight of a markup**

**1** On the Canvas toolbar, click **Select**.

The **Select** tool is active.

**2** On the canvas or in the **Markups** palette, select the desired markup or markups.

**3** On the ribbon, click the **Markup & Measure** tab ➤ **Formatting**

panel ➤ **Line Weight** drop-down list. ≡ 1 pt ▼

**4** Select the desired line weight.

The new line weight is applied to the selection.

## Edit Text Markups

Using common editing methods—cut, copy, and paste—you can edit text in three types of text markup: callouts, text boxes, and stamps.

**To edit text markups**

1  On the Canvas toolbar, click **Select**.

   The **Select** tool is active.
2  On the canvas, double-click the desired text markup.
3  Place the insertion point in the text markup and edit the text as needed.
4  To finish editing, click outside the text markup.

   The edited text markup is shown on the canvas and in the **Markups** palette.

   **TIP** If you want a different label shown in the **Markups** palette than the one shown in the markup on the canvas, change the markup's Label property in the **Markup Properties** palette.

# Cut, Copy, Paste, and Delete Markup on the Canvas

You can cut, copy, and paste markups within the same sheet, between sheets in the same DWF file, or between separate instances of Design Review. Cutting or deleting markups removes the markup from both the canvas and the Markups palette.

If no location is specified, pasting a copy of a markup (or a cut markup) without changing the canvas view, slightly offsets the pasted markup from the original. Specify a new location by clicking anywhere on a sheet.

Pasting markup can have some noteworthy and unexpected results.

■ If the markup object you paste is a dimension, the markup text (the measurement) reflects the scale and units of measurement of the sheet to which the dimension is pasted.

■ You cannot paste a markup copied from a 2D sheet on a 3D sheet, nor can you paste a markup copied from a 3D sheet on a 2D sheet.

### Paste Images on 2D Sheets

Images can be copied from any Windows application and pasted onto an open 2D sheet in Design Review. (You cannot paste an image onto an open 3D model.) After pasting, the image remains attached to the mouse pointer until you click to place it on the sheet. Once placed, the pasted image is treated like any other drawn markup and listed in the **Markups** palette below the displayed 2D sheet as "Image 1". Subsequent pasted images are listed sequentially.

**TIP** Select pasted images and create your own custom symbol catalogs.

### To cut or copy and paste a markup object

1 On the Canvas toolbar, click **Select**.
  The **Select** tool is active.

2 On the canvas or in the **Markups** palette, select the desired markup.

3 If the markup selection handles are gray on the canvas, right-click the selected markup and uncheck **Lock**. Only unlocked markup objects can be cut.
  Markup selection handles change from gray to yellow.

**4** Cut or copy the selected markup.

■ Click **Markup & Measure** tab ➤ **Clipboard** panel ➤ **Cut**.

The selected markup is removed from the canvas and the **Markups** palette and a copy is stored in memory.

■ Click **Markup & Measure** tab ➤ **Clipboard** panel ➤ **Copy**.

A copy of the selected markup is stored in memory.

**5** Optional: Change the view, select a different sheet, or open another DWF file in a separate window to receive the copied markup.

**6** Click where you want to paste the markup object.

**7** Click **Markup & Measure** tab ➤ **Clipboard** panel ➤ **Paste**.

The markup is pasted to the selected location.

**To delete a markup object**

**1** On the Canvas toolbar, click **Select**.

The **Select** tool is active.

**2** On the canvas or in the **Markups** palette, select the desired markup.

**3** If the markup selection handles are gray on the canvas, right-click the selected markup and uncheck **Lock**. Only unlocked markup objects can be deleted.

Markup selection handles change from gray to yellow.

**4** Right-click the selected markup and choose **Edit** ➤ **Delete**.

The markup is deleted from the Markups palette and the canvas.

**TIP** In the **Markups** palette, you can also right-click a markup and select **Delete**.

**See also:**

Create a Symbol Catalog from a Selection  (page 173)
Copy the Current View (page 236)

# Change Markup Properties

In the **Markup Properties** palette, four properties can be changed for each markup: **Label**, **Lock Markup**, **Status**, and **New Note**. After saving the DWF file, the changes are shown in the markup's **History** the next time you open the DWF file.

---

**NOTE**  Markup properties can be changed even if a markup is locked.

---

**To change markup properties**

1  In the **Thumbnails** or **List View** palette, select the sheet that contains the markup whose properties you want to change.

2  Select the markup on the canvas or in the **Markups** palette.

3  Optional: In the **Markup Properties** palette, in the **Label** text box, select the current label text and type a new label for the markup.

   When you select another markup property or tool, notice in the **Markups** palette, that the selected markup label changes to the new label.

4  Optional: From the **Status** drop-down list, select a status.

   Notice in the **Markups** palette, to the left of the markup name, the icon changes from None  to the desired status icon. The markup color also changes on the canvas to reflect its status.

5  Optional: Check or uncheck **Lock Markup** to disallow or allow other markup modifications.

   Notice in the **Markups** palette, to the left of the markup name, the lock icon changes to indicate the current locking state.

6  Optional: In the **Markup Properties** palette, in the **New Note** text box, type the desired information.

   **IMPORTANT**  Before closing the DWF file, make sure that your note is edited the way you want it. Existing notes are no longer editable once you reopen a DWF file.

You can now save the DWF file and send it to someone else for revision of the drawing or continued exchange of markup and discussion.

**See also:**

   Markup Status (page 31)

## Save a Summary of Markups

Design Review can create an accessible summary of all markups contained in the open DWF file. Saved as a comma-separated value (CSV) file, the markups summary can be shared and opened by a wide variety of database, spreadsheet, and word processor programs. The summary lists markups and their respective properties.

- Markup number
- Sheet name
- Markup type
- Markup label
- Markup text
- Creator
- Created date and time stamp
- Status
- Modified date and time stamp
- History

**To save a summary of markups**

1 Click the application button ➤ **Save As** ➤ **Save Markups Summary**.



The **Save Markups Summary** dialog box opens.

**TIP** You can also save a summary by clicking **Home** tab ➤ **File** panel ➤ **Save As** drop-down list and selecting **Save Markups Summary**.

2 In the **File Name** text box, type the name of the file.

3 Optional: Navigate to the location where you want to store the file.

4 Click **Save**.

5 When notified that the markup summary was saved successfully, click **OK**.

# Markup 2D DWF Files

## Snapping Markups to 2D Objects

Enabled by default, snaps are specific points on markup objects, except for freehand shapes, drawings, or model geometry that behave like magnets. Snaps enable you to connect a markup object to another markup object or to geometry on a 2D sheet.

Design Review displays snaps as you move the mouse pointer over a markup object, drawing, or model geometry. Snaps are located at key points and along the contour of the markup or geometry. The icon indicating a key snap point

is red with a white center.  The icon indicating snap points along the

contour between key points is solid red. 

**To disable snapping markups to 2D objects**

1   Click **Home** tab ➤ expand the **View** panel.
2   Uncheck **Snap to Geometry**.

Repeat these steps to re-enable snapping markups to 2D objects.

---

**NOTE**  Snapping cannot be disabled for 3D markups.

---

Almost all types of markup can be snapped to the sheet or model content as well as to other markup, with these exceptions: callouts with revision clouds, freehand markups, and custom symbols. However, these markup exceptions can be snapped to by other markup.

**To disconnect snaps**

■   Drag one markup object away from another.

### Snapping Priority

As a markup is drawn or dragged near an object, several snap points may be near each other. In this case, Design Review displays the snaps according to the following priority:

1   Intersection

**2** Endpoint, corner, midpoint, or center

**3** Geometry

For example, if **Snap to Geometry** is enabled and you draw a Line shape toward the intersection of two lines, the shape would snap to the intersection of the lines rather than to the midpoint of one of the lines. Where snap settings have the same priority, the snap target that is closer to the mouse pointer is chosen.

## Callouts for 2D Content

## About Callouts for 2D Content

Callout markups enable you to provide comments about 2D and 3D content in the canvas area. All callouts have a callout text box and a leader line. The callout enables you to provide a textual comment or annotation about content on the canvas. The leader line enables you to connect, or snap, the callout to an object on the canvas. Some callout markups have revision clouds. Revision clouds help identify the part or parts of the drawing associated with a callout text box.
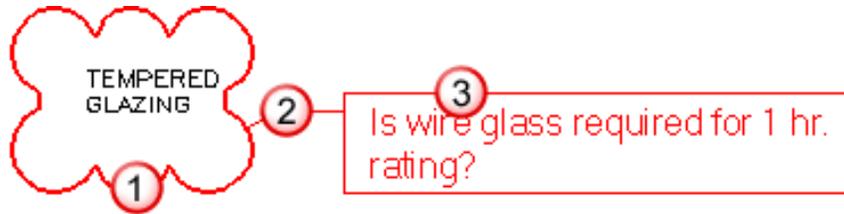


**The parts of a 2D markup callout: 1. revision cloud, 2. leader line, 3. callout text box**

For 2D content, you have many more choices on the **Callouts** panel on the **Markup & Measure** tab.

**Callout Tools for 2D Content**

| Tool | Description |
|---|---|
|  | Shaped callouts with no revision clouds. Use any of these three tools to create a rectangle, circle, or triangle callout without a revision cloud. |

| Tool | Description |
|---|---|
|  | Shaped callouts with rectangle revision clouds. Use any of these three tools to create a rectangle, circle, or triangle callout with a rectangular revision cloud. |
|  | Shaped callouts with polyclouds. Use any of these three tools to create a rectangle, circle, and triangle callout with a polygon revision cloud. |

**See also:**

Markup Basics (page 143)

## Create a Callout for 2D Content

The canvas view settings that are active at the time a markup is created are shown when a markup is selected.

**WARNING** When viewing a DWFx file in the Microsoft XPS Viewer, only markups placed completely on a sheet are shown. Markups that extend beyond the sheet are truncated.

**To create a callout for 2D content**

1  Open the DWF file that contains the 2D content you want to mark up.
2  Optional: Disable snaps (page 160).
3  Optional: Modify the canvas view settings by zooming and positioning the contents on the canvas as desired.
4  Click **Markup & Measure** tab ➤ **Callouts** panel ➤ click the desired callout.

   The mouse pointer changes to a crosshair.

   ■ To create a rectangle , circle , or triangle callout with no revision cloud, place the mouse pointer over the drawing where you want to begin the leader line and click. Then drag the callout to the desired location and click again to set the callout position.

■ To create a rectangle ⬚, circle ⬚, or triangle ⬚ callout with a rectangle revision cloud, place the mouse pointer over the drawing where you want to begin the revision cloud and click. Drag the mouse pointer diagonally to surround the location associated with the callout, and click again to finish the revision cloud and start the leader line. Then drag the callout to the desired location and click again to set the callout position.

■ To create a rectangle ⬚, circle ⬚, or triangle ⬚ callout with a polygon revision cloud, place the mouse pointer over the drawing where you want to begin the revision cloud and click and drag the mouse pointer. Click to create each segment of the polygon revision cloud, and either double-click the starting point of the polygon revision cloud, or right-click the canvas to close the polygon revision cloud.

**TIP** You can constrain the angle of each polygon segment in 15° increments by pressing and holding Shift as you drag the mouse pointer. You can also press Backspace to delete the last segment you created.

5  Type text in the callout text box.

The callout text box expands to accommodate the text.

6  Click outside the callout to complete it.

The callout is shown on the canvas and listed in the **Markups** palette under the sheet to which the markup was added.

7  Optional: Modify the callout.

**Multiple Leader Lines and Cloudless Callouts**

On 2D sheets, rectangle ⬚, circle ⬚, and triangle ⬚ callout callouts that do not have revision clouds enable you to add and remove leaders. The

benefit of additional leaders is that one callout can point to multiple locations on the same sheet.
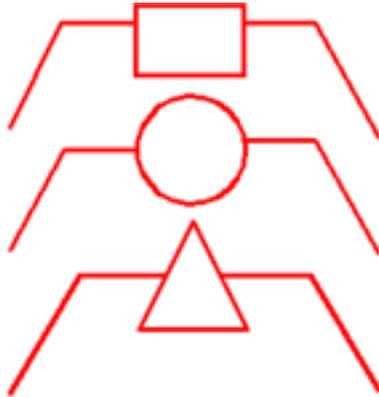
**Only 2D callouts without revision clouds can have multiple leader lines**

**To add a leader line to a cloudless callout**

1   On the canvas, select the callout you want to modify.

2   If the markup selection handles are gray, right-click the selected markup and uncheck **Lock**.

    Markup selection handles change from gray to yellow.

3   Right-click the callout and select **Add Leader**.

    A new leader is connected to the callout.

4   Move the mouse pointer where you want the new leader to point.

5   Click to set the end point of the new leader.

    The **Add Leader** tool remains active.

6   Optional: Continue adding new leader lines to the selected callout.

7   To stop using the **Add Leader** tool, right-click anywhere on the canvas, press Esc, or select another tool.

8   Optional: Reposition a leader by selecting and dragging the leader end point to the new location.

    **TIP** You can also reposition the location where a leader bends, called the elbow, by dragging that elbow handle left or right.

**To remove a leader line from a cloudless callout**

1   On the canvas, select the callout you want to modify.

**2** If the markup selection handles are gray, right-click the selected markup and uncheck **Lock**.

Markup selection handles change from gray to yellow.

**3** Right-click the callout and select **Remove Leader**.

The mouse pointer changes to the **Remove Leader** tool.

**4** Move the mouse pointer over the leader you want to remove.
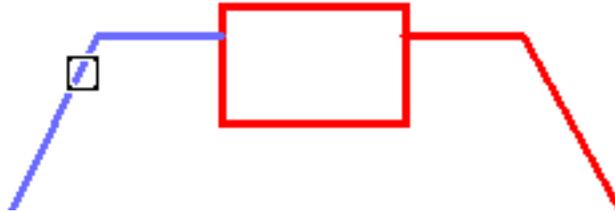
**5** Click the leader to remove it.

The **Remove Leader** tool remains active.

**6** Optional: Continue removing leader lines from the selected callout.

**7** To stop using the **Remove Leader** tool, right-click anywhere on the canvas, press Esc, or select another tool.

**See also:**

Markups Palette (page 30)

Manipulate Markup Objects (page 148)

Edit Text Markups (page 155)

Change Markup Properties (page 158)

Create a Callout for 3D Content (page 180)

Secure Markups (page 146)

Learning Resources: Alternative Methods for Performing Commands (page ?)

# Draw 2D Markups

## About 2D Drawing Markup Tools

You can draw shapes on 2D sheets using the tools on the Drawing panel.

---

**NOTE** You cannot draw shapes directly on a 3D sheet. You must first take a snapshot (page 140) of the 3D content.

---

**2D Drawing Markup Tools**

| Tool | Description |
| --- | --- |
| | **Line**. Creates a line shape markup. |
| | **Polyline**. Creates a polyline or polygon shape markup. |
| | **Freehand**. Creates a freehand shape markup. |
| | **Rectangle**. Creates a rectangle or square shape markup. |
| | **Ellipse**. Creates an ellipse or circle shape markup. |
| | **Text Box**. Creates a standalone text box markup. Unlike callouts, text box markups are not associated with a particular object on a sheet. |
| | **Freehand Highlighter**. Creates a freehand highlight shape markup. |
| | **Rectangle Highlighter**. Creates a rectangle highlight shape markup. |

| Tool | Description |
|------|-------------|
| | **Rectangle Cloud**. Creates a leaderless rectangle or square cloud shape markup. |
| | **Polycloud**. Creates a leaderless polycloud shape markup. |

## Draw a 2D Markup

The canvas view settings that are active at the time a 2D markup is created are those shown when a markup is selected.

**To draw a markup**

1 Open the DWF file that contains the 2D content where you want to draw shapes.

2 Optional: Disable snaps. (page 160)

3 Optional: Modify the canvas view settings by zooming and positioning the contents on the canvas as desired.

4 Click **Markup & Measure** tab ➤ **Draw** panel ➤ click the desired drawing tool.

   The mouse pointer changes to a crosshair.

   ■ To create a line shape ▱ , click to define the starting point, move the mouse pointer, and click again to set the endpoint. Before setting the endpoint, you can constrain a line angle to 15° increments by pressing and holding Shift.

   ■ To create a polyline shape ▱ , click to define the starting point, move the mouse pointer, and click to create each segment. Press and hold Shift to constrain the angle of each polyline segment to 15° increments. Press Backspace to delete the last polyline segment created. Double-click to set the endpoint.

   **TIP** You can also create a closed polygon by clicking the polyline shape starting point. Once you close a polyline creating a polygon, it is automatically filled with the current fill color.

- To create a freehand shape ![freehand icon], click and hold the left mouse button to define the starting point and drag to draw. Release the mouse button to set the endpoint.

- To create a rectangle shape ![rectangle icon], click to define the starting point, move the mouse pointer, and click again to set the endpoint. Before setting the endpoint, you can press and hold Shift while drawing a rectangle to create a square shape.

- To create an ellipse shape ![ellipse icon], click to define the starting point, move the mouse pointer, and click again to set the endpoint. Before setting the end point, you can press and hold Shift while drawing an ellipse shape to create a circle shape.

- To create a text box ![text box icon], you have two choices. You can click once to create a text box that is one character wide with a small margin, or you can click and drag a text box to a desired size. Clicking once creates a text box with an undefined width; the text will not wrap. Clicking and dragging a text box diagonally sets the text box width, which will cause the text to wrap at the right border.

  **TIP** By default, text boxes show no border. To show a border, click **Markup & Measure** tab ➤ **Formatting** panel uncheck **No Border** to display a text box border.

- To create a freehand highlight shape ![freehand highlight icon], click and hold the left mouse button to define the starting point and drag to draw. Release the mouse button to set the endpoint.

- To create a rectangle highlight shape ![rectangle highlight icon], click to define the starting point, move the mouse pointer, and click again to set endpoint. Before setting the endpoint, you can press and hold Shift while drawing a rectangle to create a square shape.

- To create a rectangle cloud shape ![rectangle cloud icon], click to define the starting point, move the mouse pointer, and click again to set the endpoint. Before setting the endpoint, you can also press and hold Shift while drawing a rectangular cloud to create a square cloud shape.

- To create a polygon cloud shape ![polygon cloud icon], click to define the starting point, move the mouse pointer, and click to create each segment.

Press and hold Shift to constrain the angle of each polyline segment to 15° increments. Press Backspace to delete the last segment created. Click the polygon cloud shape starting point to set the endpoint.

5   To stop using the selected drawing tool, press Esc or select another tool.

The markup is shown on the canvas and listed in the **Markups** palette under the sheet to which the markup was added.

6   Optional: Reposition or resize the markup.

**See also:**

Markup Basics (page 143)

## Change 2D Line Patterns

Unlike 3D markups, 2D markups can have different line patterns. Any 2D lines (**Line**, **Polyline**, **Freehand**, **Rectangle**, **Ellipse**, **Text Box**, and leader lines) can have line patterns applied.

**NOTE** Line patterns cannot be applied to markup revision clouds.

**To change 2D line patterns**

1   On the canvas or in the **Markups** palette, select the desired 2D markup or markups.

2   Click **Markup & Measure** tab ➤ **Formatting** panel ➤ **Line Pattern** drop-down list. 

3   Select the desired line pattern.

The **Line Pattern** is applied.

**See also:**

Format Markups (page 151)

## Change 2D Line Start and End Styles

Unlike 3D markups, 2D markups can have different end styles for the start and end styles. Any 2D markup with lines (**Freehand**, **Line**, **Polyline**, and

callouts with leaders) can have arrow styles applied. Each line can have a different **Line Start Style** ![None dropdown] and **Line End Style** ![None dropdown] .

---

**NOTE** Line start and end styles can be applied to locked or unlocked markup objects.

---

**To change 2D line start and end styles**

1   On the canvas or in the **Markups** palette, select the desired 2D markup or markups with lines or leaders.

2   Select a line start and end style.

■   Click **Markup & Measure** tab ➤ **Formatting** panel ➤ **Line Start Style** drop-down list ![None dropdown] and select the desired start style.

The **Line Start Style** is applied.

■   Click **Markup & Measure** tab ➤ **Formatting** panel ➤ **Line End Style** drop-down list ![None dropdown] and select the desired end style.

The **Line End Style** is applied.

**See also:**

Format Markups (page 151)

## Stamp a 2D Sheet

A stamp is a text markup you can add to a 2D sheet to indicate its status in the design review process. Design Review includes seven predefined stamps:

**Approved**, **For Review**, **Final**, **Not to Scale**, **Not for Construction**, **Preliminary**, and **Rejected**. Predefined stamps cannot be deleted.



**Stamps can be modified like other text boxes**

**To stamp a 2D sheet**

1 Open the DWF file that contains the 2D content you want to stamp.

2 Optional: Modify the canvas view settings by zooming and positioning the contents on the canvas as desired.

3 Click **Markup & Measure** tab ➤ **Stamps & Symbols** panel



➤ **Stamps** drop-down.

4 Select the desired stamp.

5 On the 2D sheet, click where you want to position the lower, left corner of the stamp.

The stamp is placed on the canvas and remains selected.

The stamp is shown on the canvas and listed in the **Markups** palette under the sheet to which the markup was added.

6 Optional: Reposition or resize the stamp.

7 Optional: Double-click the stamp to modify the text.

**See also:**

Markup Basics (page 143)

Use Symbols  (page 172)

Manipulate Markup Objects (page 148)

Edit Text Markups (page 155)

## Use Symbols

## About Symbols

As a type of markup, symbols can be used and reused on any 2D sheet. The benefit of using this type of markup is the ability to access and consistently reuse common symbols.

In Design Review, custom symbols are stored in catalogs. These catalogs can be made from selected 2D content. For example, you can create a new symbol catalog from selected markup objects on 2D sheets. You can also import DWF files and create a new catalog containing separate symbols from each object, or block, if the block template information was included in the DWF file when it was published by a design application, such as AutoCAD. (For nested objects, only the top-level object is imported.) Another option when importing DWF files is to create a new catalog containing a separate symbol from each 2D sheet in the DWF file, regardless of how many objects are on a sheet.

In addition to importing DWF files with drawings and text, you can also use DWF files with images or snapshots as symbols. Image types include:

- Sheets created by the Snapshot tool

- JPEG (.jpg, .jpeg, .jpe, .jfif)

- PNG (.png)

- TIFF (.tif, .tiff)

The initial size of the symbol is determined by the dpi (page 282) supplied when the image was created. If there is no dpi information in the source image, Design Review creates it at 150 dpi. If an image was created with a transparent layer (called "alpha transparency"), the transparency is recognized in Design Review.

The background of a custom symbol is transparent. Unlike stamps, symbols cannot be edited or formatted, and scale is ignored when converting DWF files to symbol catalogs.

**See also:**

Markup Basics (page 143)

Create a New 2D Sheet by Taking a Snapshot (page 140)

# Create a Symbol Catalog from a Selection

To use custom symbols in Design Review, you can create a new symbol catalog from any selected object or objects on a 2D sheet. All selected objects become a catalog available from the **Symbols** drop-down. The individual objects are arranged on the catalog submenu and can then be applied to 2D sheets in other DWF files.

**To create a symbol catalog from a selection**

1   With any 2D sheet open on the canvas, select the objects you want to include in your new symbol catalog.

2   Click **Markup & Measurement** tab ➤ **Stamps & Symbols** panel

   ➤ **Symbols** drop-down.

3   Click **Create Catalog from Selection**.

   The **Create Catalog from Selection** dialog box opens.

4   In the **Enter the Symbol Catalog Name** text box, accept the default catalog name or type a new name. Use a unique name for each catalog. Design Review prevents duplicate names. If you use the name of an existing catalog, you are prompted to replace the existing catalog.

5   Click **OK**.

   A message informs you about the successful catalog creation and how many symbols it contains. The new catalog is added to the **Symbols** drop-down in alphabetical order, and each symbol is listed in a submenu.

**See also:**

# Create a Symbol Catalog from a DWF File

You can create a symbol catalog from DWF files containing 2D sheets and objects. These sheets and objects become a catalog available from the **Symbols** drop-down. The individual items are arranged on the catalog submenu and can then be applied to 2D sheets in other DWF files.

**TIP** If you are having trouble creating a symbol catalog from an older DWF file, you may need to update its DWF version. Open the older DWF file in Design Review and save it to the latest DWF version. The updated DWF file can then be used to create a custom symbol catalog.

To import each object on a sheet as a symbol in a catalog, the block template information must have been included in the DWF file when it was published by the design application. (For nested objects, only the top-level object is imported.)

**To import each object on a sheet as a symbol in a catalog**

1   With any 2D sheet open on the canvas, click **Markup & Measure** tab

    ➤ **Stamps & Symbols** panel ➤ **Symbols** drop-down.

2   Click **Create Catalog from DWF**.

    The **Create Catalog from DWF** dialog box opens.

3   Navigate to where the DWF file that contains the symbols you want to import is stored.

4   Select the DWF file and click **Open**.

    The **Create Catalog from DWF** dialog box opens.

5   Accept the default catalog name or type a new name. Use a unique name for each catalog. Design Review prevents duplicate names. If you use the name of an existing catalog, you are prompted to replace the existing catalog.

6   Select **Import Each Object on Sheets as a Symbol**.

7   Click **OK**. If the DWF file is password-protected, a dialog box opens prompting for the password. Enter the password and click **OK**.

    The **Symbol Labels** dialog box opens.

    You can select a symbol label based on a published property or you can allow Design Review to apply an incremental catalog name to all symbols. If you select a symbol label based on a property name, each symbol will use the property name associated with it when the object was published. If you cancel the **Symbol Labels** dialog box, incremental symbol labels based on catalog name will be given to the imported symbols. For instance, if the catalog is named Pipes, Design Review label each symbol Pipes 1, Pipes 2, and so on.

8   Optional: From the **Property Name** drop-down list, select a property name to use for symbol labels.

**9** Click **OK**.

A message informs you about the successful catalog creation and how many symbols it contains. The new catalog is added to the **Symbols** drop-down in alphabetical order, and each symbol is listed in a submenu.

**To import each sheet as a symbol in a catalog**

**1** With any 2D sheet open on the canvas, click **Markup & Measure** tab

➤ **Stamps & Symbols** panel ➤ **Symbols** drop-down.

**2** Click **Create Catalog from DWF**.

The **Create Catalog from DWF** dialog box opens.

**3** Navigate to where the DWF file that contains the symbols you want to import is stored.

**4** Select the DWF file and click **Open**.

The **Add Symbol Catalog** dialog box opens.

**5** Accept the default catalog name or type a new name. Use a unique name for each catalog. Design Review prevents duplicate names. If you use the name of an existing catalog, you are prompted to replace the existing catalog.

**6** Select **Import Each Sheet as a Symbol**.

**7** Click **OK**. If the DWF file is password-protected, a dialog box opens prompting for the password. Enter the password and click **OK**.

A message informs you about the successful catalog creation and how many symbols it contains. The new catalog is added to the **Symbols** drop-down in alphabetical order, and each symbol is listed in a submenu.

**See also:**

## Place a Symbol on a Sheet

Once you have created a custom symbol catalog in Design Review, you can place the custom symbols onto a 2D sheet.

**To place a symbol on a sheet**

**1** Open the DWF file that contains the 2D content to which you want to add the symbol.

**2** Optional: Modify the canvas view settings by zooming and positioning the contents on the canvas as desired.

**3** Click **Markup & Measure** tab ➤ **Stamps & Symbols** panel

➤ **Symbols** drop-down. 

**4** Select the desired catalog and symbol.

**5** On the 2D sheet, click where you want to position the center of the symbol. The symbol is placed and remains selected.

The symbol is shown on the canvas and listed in the **Markups** palette under the sheet to which the markup was added.

**6** Optional: Reposition or resize the symbol.

**See also:**

## Manage Symbol Catalogs

Design Review enables you to rename, delete, export, and import custom symbol catalogs. Export your custom symbols as a symbol catalog file enables you to place the symbol catalog file in a central location or distribute it by email. Team members and clients can then import the symbol catalog file, ensuring that they have symbols identical to your own.

**NOTE** You cannot remove an individual symbol directly from a catalog. You can only delete an entire symbol catalog. To modify an existing symbol catalog, make a different selection or open an a modified DWF file and recreate the catalog using the same catalog name to overwrite the existing catalog.

**To rename a symbol catalog**

**1** Click **Markup & Measure** tab ➤ **Stamps & Symbols** panel ➤

**Symbols** drop-down.

**2** Click **Manage Catalogs**.

The **Manage Catalogs** dialog box opens.

**3** From the **Current Catalogs** list, select the symbol catalog to be renamed.

**4** Click **Rename**.

The previous catalog name is highlighted.

**5** Type a new name and press **Enter** to change the name.

**TIP** Despite the order shown in the **Current Catalogs** list, the catalogs are listed alphanumerically on the **Symbols** drop-down. Rename symbol catalogs to achieve the desired list order.

**To delete a symbol catalog**

**1** Click **Markup & Measure** tab ➤ **Stamps & Symbols** panel ➤

**Symbols** drop-down.

**2** Click **Manage Catalogs**.

The **Manage Catalogs** dialog box opens.

**3** From the **Current Catalogs** list, select the symbol catalog or catalogs to be deleted.

**TIP** Shift- or Ctrl-click to select multiple symbol catalogs.

**4** Click **Delete**.

**5** When prompted, "Are you sure you want to remove the selected catalogs?", click **OK**.

The symbol catalog is removed from the **Current Catalogs** list.

**To export a symbol catalog**

**1** Click **Markup & Measure** tab ➤ **Stamps & Symbols** panel ➤

**Symbols** drop-down.

**2** Click **Manage Catalogs**.

The **Manage Catalogs** dialog box opens.

**3** From the **Current Catalogs** list, select the symbol catalog to be exported.

**4** Click **Export**.

The **Export Symbol Catalog** dialog box opens.

**5** Optional: Navigate to the location where you want to store a copy of the symbol catalog file.

**6** Optional: In the **File Name** text box, type the name of the file.

**7** Click **Save**.

**To import a symbol catalog**

**1** Click **Markup & Measure** tab ➤ **Stamps & Symbols** panel ➤



**Symbols** drop-down.

**2** Click **Manage Catalogs**.

The **Manage Catalogs** dialog box opens.

**3** From the **Current Catalogs** list, select the symbol catalog to be imported.

**4** Click **Import**.

The **Import Symbol Catalog** dialog box opens.

**5** Navigate to where the symbol catalog you want to import is stored.

**6** Select the symbol catalog file and click **Open**.

The imported symbol catalog is displayed in the **Current Catalogs** list.

**See also:**

Use Workspaces  (page 38)

Share Design Review Options  (page 256)

# Rotate Markup Objects

Design Review enables you to rotate markup objects on a 2D sheet. You can rotate the following markup objects:

■ Text boxes

■ Rectangles and ellipses

- Rectangular highlights
- Stamps
- Symbols

**To rotate markup objects**

1 On the canvas or in the **Markups** palette, select the desired markup.

2 If the markup selection handles are gray, right-click the selected markup and uncheck **Lock**. Only unlocked markup objects can be rotated.

Markup selection handles change from gray to yellow. On top of the markup object, the rotation handle changes to green.
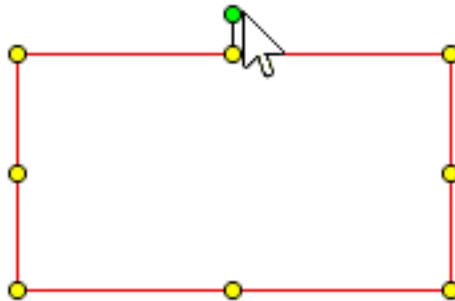
**Rotation handle for a rectangle object**

3 Click the rotation handle and drag it in the direction you want to rotate the object. The mouse pointer changes into an active rotation icon and the object rotates according to the mouse pointer movement.
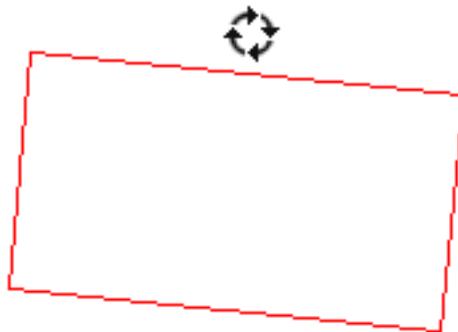
**Active rotation icon when the object rotates**

**TIP** During rotation, the object will soft snap at 90° increments. To rotate the markup object at 45° increments, press and hold Shift as you rotate the markup object.

**See also:**

# Markup 3D DWF Files

## About Callouts for 3D Content

Like 2D callout markups, 3D callout markups enable you to provide comments about content in the canvas area. Unlike 2D callouts, for 3D content only the **Rectangle Callout** is available from the **Callouts** panel on the **Markup & Measure** tab.

To access the 2D markup tools, take a snapshot of the 3D content. A snapshot creates a 2D sheet, enabling the 2D markup tools.

**See also:**

## Create a Callout for 3D Content

The canvas view settings that are active at the time a markup is created are those shown when a markup is selected.

**To create a callout for 3D content**

1 Open the DWF file that contains the 3D model you want to mark up.
2 Optional: Modify the canvas view settings by zooming and orbiting the view as desired.
3 Click **Markup & Measure** tab ➤ **Callouts** panel ➤ **Rectangle Callout**.

The mouse pointer turns into a crosshair.

**4** Place the mouse pointer over the model where you want to begin the leader line and click to set the leader line.

**5** Move the mouse pointer to the location where you want to place the callout text box and click again to set the callout text box position.

**6** Type the text in the callout text box.

The callout text box expands to accommodate the text.

**7** Click outside the callout to complete it.

The callout is shown on the canvas and listed in the **Markups** palette under the sheet to which the markup was added.

**8** Optional: Modify the callout.

**NOTE** A 3D callout cannot have multiple leader lines.

**See also:**

# Measure Objects in DWF Files

## About Measurements

Design Review enables you to add and save measurement markups for 2D and 3D content using the **Measure** panel on the **Markup & Measure** tab. Like the **View** panel on the **Home** tab, the **Measure** tab can be expanded to

access additional tools. The type of content displayed on the canvas, 2D or 3D, determines which measurement tools are enabled.

**Measurement Tools Enabled by Type of Content**
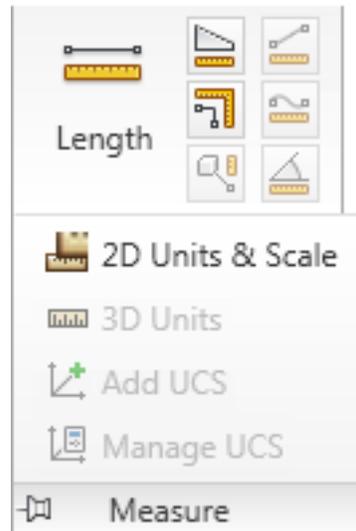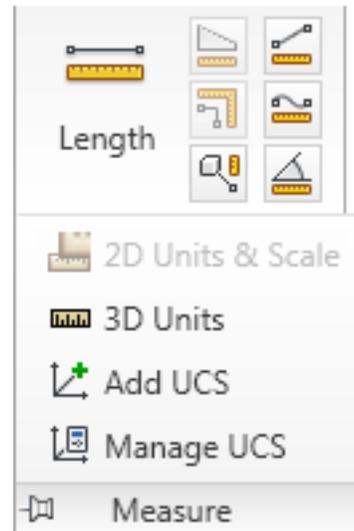


For 2D content                    For 3D content

Each measurement markup may consist of a line or lines, arrowheads, and a label with text and a background color. After you create a measurement markup, its **Font Size**, **Text Color**, **Line Weight**, **Line Color**, **Fill Color**, **Line Style**, **Fill Transparency**, and whether or not dimension text is **Bold** can be changed, if necessary, using the **Formatting** panel on the **Markup & Measure** tab. If no markup is selected on the canvas, but a measurement tool is active, then any changes made using the formatting tools affects all new markups.

**TIP** To make it easier to modify measurement markups, select them in the **Markups** palette.

**See also:**

## About Measure-Disabled DWF Files

Generally, Design Review enables you to measure both 2D and 3D objects. However, in some cases, measurements are prevented. Users of Autodesk® Inventor® R11 DWF Extension (available to subscription customers) or later can disable the measurement options for some or all sheets or models in the published DWF file.

If a sheet is measure-disabled, you will not be able to measure the disabled content. When a measure-disabled sheet is displayed on the canvas, the measurement tools are disabled.

---

NOTE If a file contains disablements, a lock icon  is shown on the **Canvas toolbar** and in the **Restrictions** column of the **List View** palette.

---

See also:

## Measurements with Multiple Viewports

You may be working on a sheet with several *viewports (page 285)* . The original designer creates the view in a viewport by panning, zooming, or, for 3D, rotating the drawing or a section of it. Each sheet may have one or more viewports, each of which may have a different scale.

If you move a measurement markup completely into another viewport or sheet, the measurement markup is updated according to the scale of the viewport or sheet to which you moved it.
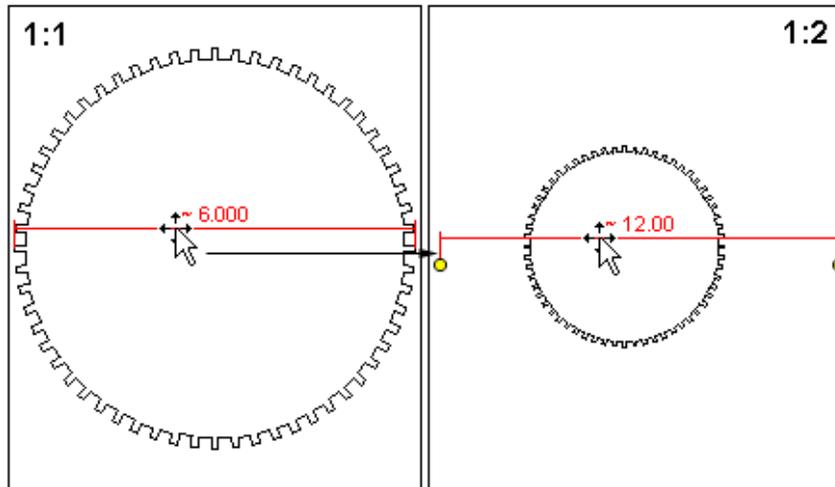


**Moved measurement markup takes scale of new viewport**

If you start a measurement on one viewport or sheet and end it on another viewport or sheet, the measurement reflects the scale of the starting viewport or sheet.
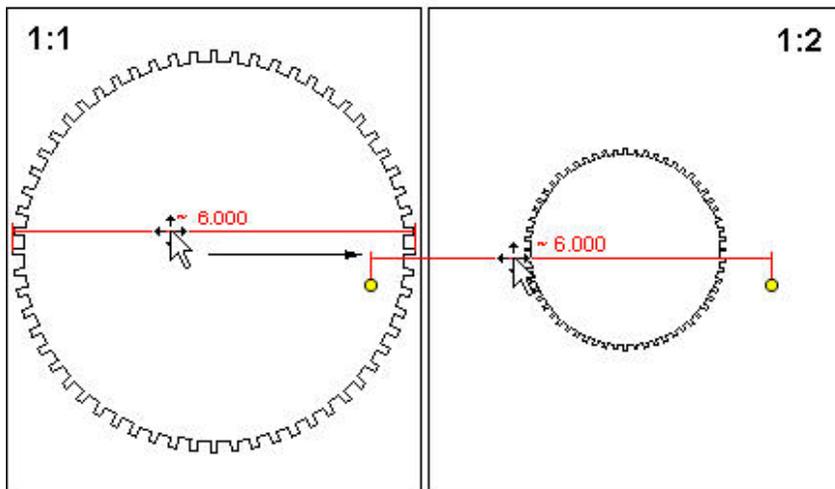
**Measuring between viewports, the measurement scale is based on that of the viewport where the measurement starts**

**See also:**

About the Units and Scale Dialog Box  (page 186)

# Measure 2D Objects

## About 2D Measurements

When you measure an object on the canvas, Design Review tracks the label name and the unit of measurement in the **Markups** palette. Measurements of 2D objects are labeled as "Dimension: xxx.xx units", for example, "Dimension: 4.33 in". When you select a measurement markup in the Markups palette, the appropriate sheet is displayed on the canvas, and the view pans and zooms to the view that was active when the markup was created.



**A 2D measurement in the Markups palette**

If the sheet is not measure-disabled, and if the measurement markups are unlocked, they can be selected, deleted, or resized. The measurement markup label can also be repositioned.

In a measurement markup label, the numeric values cannot be directly edited, since the purpose of a measurement markup is to indicate the measurement of the selected points. You can, however, reposition the handles on a 2D measurement markup, thereby creating a different value.

**TIP** You can also modify the markup label in the **Markup Properties** palette.

As you measure an object, the highlight and selection colors are determined by the **Object Highlighting** settings on the **Sheet** tab in the **Options** dialog box.

**See also:**

About Measurements (page 181)

Markup Basics (page 143)

## About Precise 2D Measurements

The accuracy and precision of a measurement is affected by the resolution and paper size of the original drawing, and the zoom at which you create the measurement. You can ask the DWF file publisher to change the paper size (which will have a corresponding change to the drawing scale) or ask the publisher to change the *resolution (page 284)* according to your needs. If you have the DWG file, publish it at a higher resolution from DWG TrueView. Note, however, that using a higher *dpi (page 282)* setting will marginally increase the DWF file size and may result in slower performance sharing the file, opening it, and changing the view.

In AutoCAD, the default publishing resolution for a DWF file is 1200 dpi. This resolution provides the same security as a printed drawing, from which it would be challenging to recreate the original DWG file. You may therefore receive a DWF file with a 6-inch length, which would be displayed as 5.98 inches, for example. If you receive a measurement such as 5.98 for a length that you know should be a round number, you can pan and zoom in on a measurement markup *handle (page 283)* to reposition it more precisely, so it displays a round figure, such as 6.00.

## About the Units and Scale Dialog Box

The **2D Units and Scale** dialog box enables you to control the precision displayed by 2D measurement markups for each 2D sheet in the DWF file. Measurements can be in Imperial (feet and inches) or metric units.

In Design Review, the units and scale from the original drawing are used by default. However, if the original drawing did not specify units of measurement, only numeric values of the measurement are displayed in the resulting DWF file. You may set the units and scale for all measurements yourself either before or after a measurement markup has been created for each 2D sheet in a DWF file.

**NOTE** You can use 2D measurement tools for most georeferenced maps. However, if a map does not contain a published *coordinate system (page 282)* and the units are latitude and longitude, the measure-related tools are disabled.

A drawing has both drawing units and display units. Drawing units are the intended units of measurement of the real-world object. Because a 10-foot by 10-foot room cannot be represented on screen at its full size, each unit in a drawing represents its real-world unit, such as a foot in this case. (If you select inches, it displays 10 inches by 10 inches. If you select centimeters, it displays 10 cm by 10 cm. If you select feet, it displays 10 feet by 10 feet.) If the drawing units are unknown, the measurements display as "10 by 10".

Display units are the units displayed in the measurement markups. Unless you change the display units, the display units match the drawing units. A 10-foot by 10-foot room is displayed as 10 feet by 10 feet, but it can also be displayed as 120 inches by 120 inches, 3.048 m by 3.048 m, 304.8 cm by 304.8 cm, and so on. Display units cannot be applied until the drawing units are known.

### Drawing Units

**Units of the Drawing from which This Sheet Was Published** Select **Unknown** (disables remaining options), **Inches**, **Feet**, **Feet and Inches**, **Yards**, **Miles**, **Millimeters**, **Centimeters**, **Meters**, **Kilometers**, *Points (page 284)* , or *Twips (page 285)* .

**Make This the Default for DWF Files That Don't Have 2D Units** Apply the selected drawing units to all 2D sheets in DWF files opened after the setting has been applied.

### Display Units

**Units to which Drawing Units Will Be Converted When Displaying Measurements** Select **Unknown** (disables remaining options), **Inches**, **Feet**, **Feet and Decimal Inches**, **Feet and Fractional Inches**, **Yards**, **Miles**, **Millimeters**, **Centimeters**, **Meters**, **Kilometers**, **Points**, or **Twips**.

**Decimal** Control display precision by selecting **Automatic** or up to eight decimal places to be displayed in a 2D measurement markup. **Automatic** uses the level of precision included in the DWF file when it was published.

**Fractional** When **Feet and Fractional Inches** is the display units selection, control display precision by selecting **Automatic** or up to 1/256th of an inch to be displayed in a 2D measurement markup. **Automatic** uses the level of precision included in the DWF file when it was published.

**Make This the Default for DWF Files That Don't Have 2D Units** Apply the selected drawing units to all 2D sheets in DWF files opened after the setting has been applied.

### Scale

**Scale** If a scale was set when the DWF file was published, that scale is reflected in the measurements displayed in Design Review. A 1-to-1 scale is displayed for the open drawing. It shows 1" = 1" (1 inch equals 1 inch) for Feet and

Inches or 1:1 for metric scale, depending on whether the drawing was set in Imperial (feet and inches) or metric.

If the published scale is incorrect or you prefer a different scale, you can change the published scale for the 2D sheet.

---

**IMPORTANT** Changing the published scale has these consequences.

■ Published scales are overwritten. Once modified, you cannot revert back to the original, published scale value.

■ Viewport scales are overwritten. If the sheet contains one or more viewports, the new scale is applied to the sheet and all viewports in the sheet. If the viewports had different scales, those scales are overwritten by the sheet's new scale.

■ Viewport measurement values are changed. If the sheet contains one or more viewports with measurements, the new scale is applied to the sheet, all viewports in the sheet, and all measurements in the viewports. The value of these re-scaled viewport measurements viewed in Autodesk Design Review 2012 may be different if the same DWF file is viewed in previous versions of Design Review

---

Custom Scale enables you to enter a custom scale using the On Page and Actual options. For example, a 1" = 10' (1 inch equals 10 feet) custom scale designates that each inch displayed in the drawing represents 10 feet in the real world.

**On Page** Enter the value for measurements in the drawing.

**Actual** Enter the value you want measurements to represent in the real world.

**See also:**

**To set precision for 2D measurement markups**

1 Click **Markup & Measure** tab ➤ expand the **Measure** panel.

2 Select **2D Units & Scale**.

The **2D Units and Scale** dialog box opens.

3 In the **Drawing Units** area, from the **Units of the Drawing from which This Sheet Was Published** drop-down list, select the desired units.

This setting is saved with the DWF file for the current sheet.

**4** Optional: Click **Make This the Default for DWF Files That Don't Have 2D Units** to have these units applied to all 2D sheets in DWF files after this setting has been applied.

**5** In the **Display Units** area, from the **Units to which Drawing Units Will Be Converted When Displaying Measurements** drop-down list, select the desired units.

This setting is saved with the DWF file for the current sheet.

**6** Under **Display Precision**, from the **Decimal** drop-down list, select the number of decimal places to be displayed in a 2D measurement markup.

**7** If **Feet and Fractional Inches** was selected in the **Units to which Drawing Units Will Be Converted When Displaying Measurements** drop-down list, from the **Fractional** drop-down list, select up to 1/256th of an inch to be displayed in a 2D measurement markup.

**8** Optional: Click **Make This the Default for DWF Files That Don't Have 2D Units** to have these units applied to all 2D sheets in DWF files after this setting has been applied.

**9** IMPORTANT   If you plan to change the sheet's published scale, be sure to first.

Optional: From the **Scale** drop-down list, select a scale.

If you select **Custom Scale**, enter the **On Page** and **Actual** values.

**10** Click **OK**.

## Measurement Tools for 2D Objects

The measurement tools can be accessed from the **Measure** panel on the **Markup & Measure** tab.

The type of content displayed on the canvas, 2D or 3D, determines which measurement tools are available on the **Measure** panel. When measuring 2D

objects, you have three measurement tools available: **Length**, **Polyline**, and **Area**.
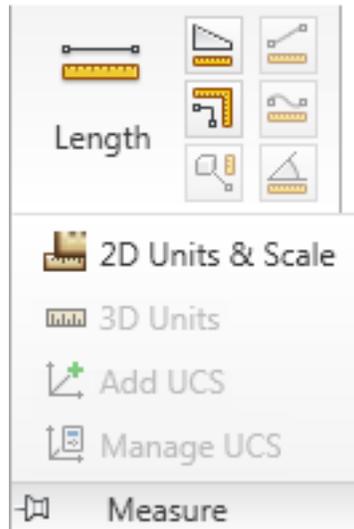


**Measurement tools for 2D objects**

**Measurement Tools for 2D Objects**

| Tool | Description |
|---|---|
| | **Length.** Measures the straight line distance between any two points. |
| | **Polyline.** Measures the total cumulative length of multiple segments, including rectangles. |
| | **Area.** Measures the area of the traced polygon or rectangle. |

## Snapping Measurements to 2D Objects

When measuring an object, the measurement tools for 2D content snap the resulting markup to that object. Snapping is especially important for

measurements, as the snap points determine the measurements displayed. Snaps are enabled by default.
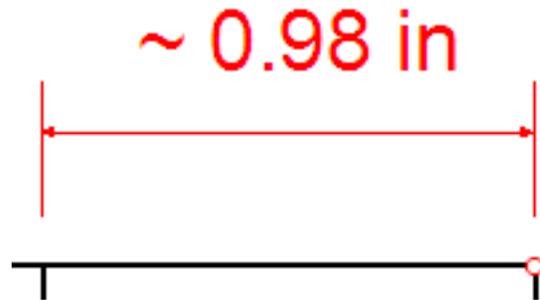


**Snaps display as small red circles**

**To disable snapping measurements to 2D objects**

1  Click **Home** tab ➤ expand the **View** panel.
2  Uncheck **Snap to Geometry**.

Repeat these steps to re-enable snapping measurements to 2D objects.

---

**NOTE** Snapping cannot be disabled for 3D markups.

---

Repeat this step to re-enable snapping measurements to objects.

**See also:**

Snapping Markups to 2D Objects (page 160)

## Create 2D Measurements

Before you create 2D measurement markups, you may want to set formatting options for the markup, select the desired drawing units, display units, and scale in the **Units and Scale** dialog box, and if desired, disable the **Snap to Geometry** option.

### Measure the Length Between Two Points

When making vertical measurements, you can position the label to the right or left of the measurement markup. To have a label appear on the right, begin

the measurement by clicking the top point first. To have measurements appear on the left, begin the measurement by clicking the bottom point first.

**To measure the length between two points**

1  Click **Markup & Measure** tab ➤ **Measure** panel ➤ **Length**.

2  On the sheet, place the mouse pointer where you want to begin the measurement and click to set the start point.

3  Place the mouse pointer where you want to end the measurement and click to set the end point.
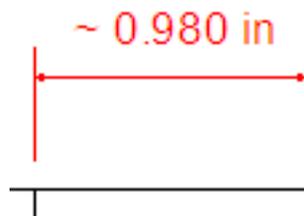
The measurement markup displays the length in the chosen format and units. A measurement appears in the **Markups** palette as Dimension: xxx.xxx units. The **Length** tool remains active for other measurements.

4  Optional: Make additional measurements.

5  To stop using the **Length** tool, press Esc or select another tool.

   **TIP** Pressing Esc while measuring cancels the current measurement, but leaves the measuring tool active. Pressing Esc again cancels the **Measure** tool, making the **Select** tool active.

6  Optional: Modify the measurement markup position by clicking between handles and dragging the markup to a different location. You can also click and drag markup start and end handles, but this will change the markup value.

After making horizontal **Length** measurements, the label always appears centered above the measurement line. You can move this label horizontally along the measurement markup.

**To move the label of a measurement markup**

1  Select the desired measurement markup.

**2** Place the mouse pointer over the middle handle and pause until the handle gets larger.

**3** Click and drag the larger handle to the desired position along the measurement markup.

---

**TIP** Drag the middle handle up or down to reposition the markup value relative to the measurement.

---

**Measure the Length of a Polyline**

A cumulative length tool, the **Polyline** tool displays the length of multiple linear segments, including rectangles.

**To measure the length of a polyline**

**1** Click **Markup & Measure** tab ➤ **Measure** panel ➤ **Polyline**.

**2** On the sheet, place the mouse pointer where you want to begin the measurement and click to set the start point.

**3** Click each subsequent point to be added to the polyline.

**TIP** To constrain a polyline measurement in 15° increments, press and hold Shift while rotating a polyline segment. The line will rotate at 15°, 30°, 45° and so on.

**4** End the polyline measurement.
- Press Esc to end the polyline measurement at the last corner created.
- Double-click to end the polyline measurement at the last point clicked.



The measurement markup displays the cumulative length in the chosen format and display units. A measurement appears in the **Markups** palette as "Dimension: xxx.xxx units". The **Polyline** tool remains active for other measurements.

**5** Optional: Make additional measurements.

**6** To stop using the **Polyline** tool, press Esc or select another tool.

**TIP** Pressing Esc while measuring cancels the current measurement, but leaves the measuring tool active. Pressing Esc again cancels the measure tool, making the Select tool active.

**7** Optional: Modify the measurement markup position by clicking between handles and dragging the markup to a different location. You can also click and drag the markup handles, but this will change the markup value.

### Measure the Area of a Rectangle or Polygon

**To measure the area of a rectangle or polygon**

**1** Click **Markup & Measure** tab ➤ **Measure** panel ➤ **Area**.

**2** On the sheet, place the mouse pointer where you want to begin the measurement and click to set the start point.

**3** Click each subsequent corner point on the rectangle or polygon.

**4** End the area measurement.
- Press Esc to end the area measurement at the last corner created.
- Double-click to end the polyline measurement at the last point clicked.
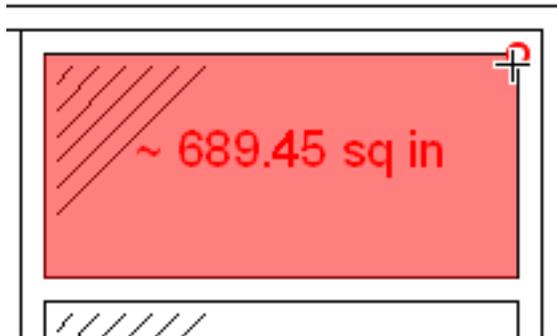


The measurement markup displays the area in the chosen format and display units. A measurement appears in the **Markups** palette as "Dimension: xxx.xxx units". The **Area** tool remains active for other measurements.

**5** Optional: Make additional measurements.

**6** To stop using the **Area** tool, press Esc or select another tool.

   **TIP** Pressing Esc while measuring cancels the current measurement, but leaves the measuring tool active. Pressing Esc again cancels the measure tool, making the Select tool active.

**7** Optional: Modify the measurement markup position by clicking between handles and dragging the markup to a different location. You can also click and drag the markup handles, but this will change the markup value.

**See also:**

   About Markup Properties (page 145)

   Secure Markups (page 146)

## Measure 3D Objects

## About 3D Measurements

When you measure an object on the canvas, Design Review tracks the label name and the unit of measurement in the **Markups** palette. Measurements of 3D objects are labeled based on the type of measurement being performed and the value is displayed as "xxx.xx units", for example "Diameter: 1.50 in". The units are determined by the **Display Units** chosen for the open sheet. When you select a measurement markup in the **Markups** palette, the

appropriate sheet is displayed on the canvas, and the view pans and zooms to the view that was active when the markup was created.
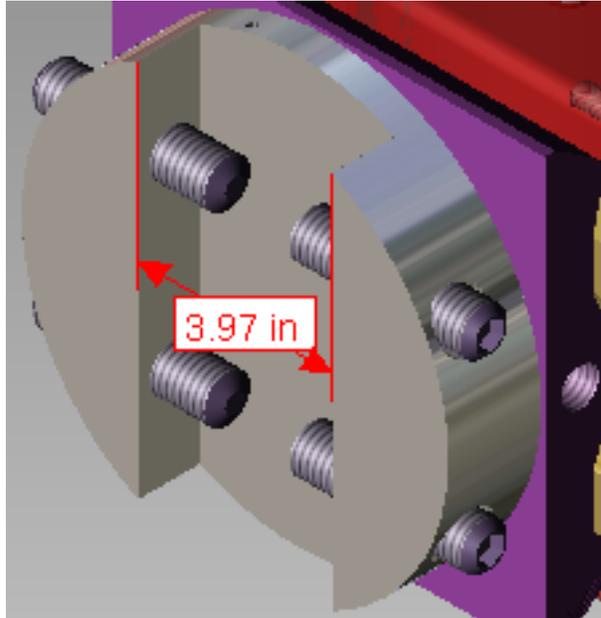


**A 3D measurement**

If the model is not measure-disabled, and if the measurement markups are unlocked, measurement markups on the canvas can be selected and deleted. The measurement markup label can also be repositioned. The numeric values cannot be directly edited, since the purpose of a measurement markup is to indicate the measurement of the selected points.

**TIP** You can also modify the markup label in the **Markup Properties** palette.

As you measure an object, the highlight and selection colors are determined by the **Object Highlighting** settings on the **Model** tab in the **Options** dialog box.

**TIP** To make it easier to modify measurement markups, select them in the **Markups** palette.

**See also:**

About Measurements (page 181)
Markup Basics (page 143)

## About the 3D Units Dialog Box

The **3D Units** dialog box enables you to control the precision displayed by 3D measurement markups for each 3D sheet in the DWF file. Measurements can be in Imperial (feet and inches) or metric units.

In Design Review, the units from the original model are used by default. However, if the original model did not specify units of measurement, only numeric values of the measurement are displayed in the resulting DWF file. You may set the units for all measurements yourself either before or after a measurement markup has been created for each 3D sheet in a DWF file.

**Display Units**

**Units for 3D Length Measurements**  Select **Unknown** (disables **Display Precision** options), **Inches**, **Feet**, **Feet and Decimal Inches**, **Feet and Fractional Inches**, **Yards**, **Miles**, **Millimeters**, **Centimeters**, **Meters**, or **Kilometers**.

**Units for 3D Angle Measurements**  Select **Degrees** or **Radians**.

**Make This the Default for DWF Files That Don't Have 3D Units**  If checked, the **Display Units** settings is the default for DWF files that do not already have published **Display Units**.

**Display Precision**

**Decimal**  Control display precision by selecting **Automatic** or up to eight decimal places to be displayed in a measurement markup. **Automatic** uses the level of precision included in the DWF file when it was published.

**Fractional**  When **Feet and Fractional Inches** is the display units selection, control display precision by selecting **Automatic** or up to 1/256th of an inch to be displayed in a 3D measurement markup. **Automatic** uses the level of precision included in the DWF file when it was published.

Precision settings are used for all DWF files viewed on this computer.

## Set Precision for 3D Measurement Markups

A model only has display units. Display units are the units displayed in 3D measurement markups on the canvas and in the **Markups** palette.

**To set precision for 3D measurement markups**

1  Click **Markup & Measure** tab ➤ expand the **Measure** panel.

2  Select **3D Units**.

   The **3D Units** dialog box opens.

3  In the **Display Units** area, from the **Units for 3D Length Measurements** drop-down list, select the desired units.

   This setting is saved with the DWF file for the current sheet.

4  Optional: Click **Make This the Default for DWF Files that Don't Have 3D Units**.

5  In the **Display Precision** area, from the **Decimal** drop-down list, select the number of decimal places to be displayed in a 3D measurement markup.

6  If **Feet and Fractional Inches** was selected as **Units for 3D Length Measurements**, from the **Fractional** drop-down list, select up to 1/256th of an inch to be displayed in a 3D measurement markup.

7  Click **OK**.

## Measurement Tools for 3D Objects

The type of content displayed on the canvas, 2D or 3D, determines which measurement tools are available. For 3D objects, there are five measurement tools: **Length**, **Point Location**, **Relative Distance**, **Length/Radius**, and

**Angle**. Expand the **Measure** panel to show two tools that help you work with user coordinate systems ( ).

**Measurement tools for 3D objects**

The last tool used remains active in the **Markup** panel. 3D measurements can be made with Perspective View turned on.

**Measurement Tools for 3D Objects**

| Tool | Description |
|---|---|
|  | **Length.** Measures the straight line distance between any combination of points, lines, and planes. |

| Tool | Description |
|------|-------------|
|  | **Point Location.** Locates the X,Y,Z location of points on a model, measured relative to the currently active *coordinate system (page 282)* .<br><br> |
|  | **Relative Distance.** Measures distance along a direction defined by some other edge of the model. |
|  | **Length/Radius.** Measures edge length, the radius of an arc, or the diameter of a circle with a single click. Radius measurements are preceded by the radius symbol (R). Diameter measurements are preceded by the diameter symbol (  ) |

| Tool | Description |
| --- | --- |
|  | **Angle.** Measures angles between lines and lines, lines and planes, and planes and planes.<br><br> |
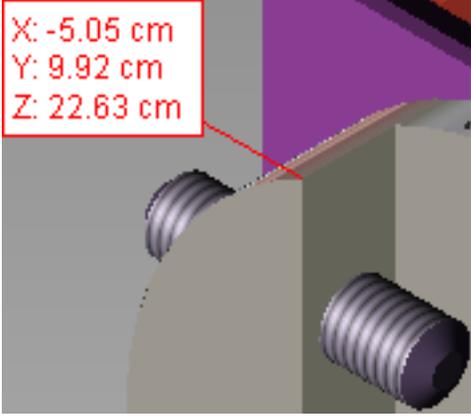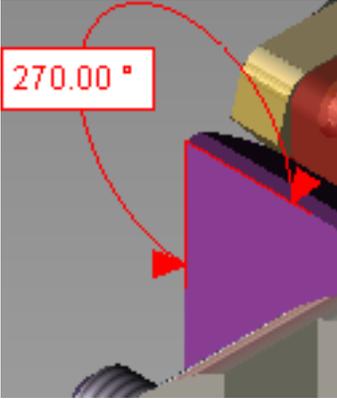
**See also:**

## About Coordinate Systems

A coordinate system is a method used to indicate object position in dimensional space. By default, when a sheet containing 3D content is displayed on the canvas in Design Review, the World Coordinate System ( *WCS (page 286)* ) is active and the Y axis points upward. You can define additional coordinate systems, called User Coordinate Systems ( *UCS (page 285)* ), for each sheet that contains a 3D model. The origin and axes of a UCS are relative to the WCS. Each UCS enables you to set up a point of reference for a particular set of point location measurements, and is represented by a new tripod at the defined location on the model.

Both the world and user coordinate systems are represented by tripods. Each tripod axis is color coded: the X axis is red; the Y is axis green; and the Z axis is blue. These tripods can be hidden or displayed as needed.

User coordinate systems allow point location measurements to be taken in the context in which they are used in the real world. For example, when locating a hole for machining, real world measurements are taken with respect to edges of the part, not to an abstract WCS.

Since the frame of reference may be different at various places on the same model, multiple UCSs can be created. However, only one coordinate system can be active at the once. The active coordinate system tripod is the largest on the canvas. Inactive coordinate systems tripods are reduced in size.

Each UCS is listed in the **Markups** palette order in which it was created. If a point location measurement has been added to a UCS, it is listed below its respective UCS in the **Markups** palette.

When you create and activate a UCS, a drop-down list is displayed under the ViewCube. From this list, you can quickly select a different coordinate system or open the **Manage Coordinate Systems** dialog box to change the settings of an existing UCS or create other coordinate systems.

**See also:**

## About the Manage Coordinate Systems Dialog Box

The **Manage Coordinate Systems** dialog box enables you to copy, manipulate, and delete user coordinate systems for the sheet displayed on the canvas. The World Coordinates is read only. It cannot be moved, modified, or deleted, as indicated by the lock icon displayed to the left of **World Coordinates** in the **Available Coordinate Systems** list.
**Available Coordinate Systems**
**Available Coordinate Systems**  Lists the WCS and all UCSs in the order they were created.

**Activate**  Makes the selected coordinate system active.

**Copy**  Makes a copy of the selected coordinate system.

**Delete**  Deletes the selected UCS.

**Selected Coordinate System Position**
**Location of Origin in World Coordinates**  Current position of the selected UCS origin in relation to the origin of the WCS.

**X**. Enter a value, either positive or negative, to change the X coordinate of the selected UCS origin relative to the WCS.

**Y**. Enter a value, either positive or negative, to change the Y coordinate of the selected UCS origin relative to the WCS.

**Z**. Enter a value, either positive or negative, to change the Z coordinate of the selected UCS origin relative to the WCS.

**Axis Directions   Flip X Axis**. Flips current X axis 180°.

**Flip Y Axis**. Flips current Y axis 180°.

**Flip Z Axis**. Flips current Z axis 180°.

**Offset Selected Coordinate System**
**Move Selected Coordinate System from Current Location by   X.** Type the number of units to move the origin relative to the X axis.

**Y.** Type the number of units to move the origin relative to the Y axis.

**Z.** Type the number of units to move the origin relative to the Z axis.

**Display Coordinate Systems on Top**  Displays coordinate systems in front of 3D objects.

## Add a User Coordinate System

In Design Review, you can add a user coordinate system to a 3D model directly. When adding a UCS, camera tools, like Orbit, can be used during the measurement process, in case you must reposition the model.

To begin adding a UCS, you can click either a point or an edge of a 3D model. If you first click a point, or vertex, on a model, this sets the origin of the UCS tripod. The next two clicks define the X and Y axes. If you click a model edge first, this sets the X axis. The next click defines the Y axis. The Z axis is set automatically.

After adding a new UCS, it becomes the active coordinate system.

**To add a UCS directly to a point on a 3D model**

1  Click **Markup & Measure** tab ➤ expand the **Measure** panel.
2  Click **Add UCS**.

   The mouse pointer changes to a crosshair.
3  On the model, place the mouse pointer over the point where you want to begin creating the UCS and click to set the origin.

4   Optional: To position the model so you can see where you want to begin setting the UCS, expand and pin the **Measure** panel, use the desired camera tool, and click the **Add UCS** again to resume adding the UCS.

5   On the model, place the mouse pointer over the next point or edge where you want to define the X axis and click to set the X axis.

6   On the model, place the mouse pointer over the next point or edge where you want to define the Y axis and click to set the Y axis.

    The UCS tripod is displayed on the canvas and listed in the Markups palette. Placing the mouse pointer over a UCS shows its name in a screen tip.

**To add a UCS directly to an edge on a 3D model**

1   Click **Markup & Measure** tab ➤ expand the **Measure** panel.

2   Click **Add UCS**.

    The mouse pointer changes to a crosshair.

3   On the model, place the mouse pointer over the edge where you want to begin creating the UCS and click to set the X axis.

4   Optional: To position the model so you can see where you want to begin setting the Y axis, expand and pin the **Measure** panel, use the desired camera tool, and click the **Add UCS** again to resume adding the UCS.

5   On the model, place the mouse pointer over the next point or edge where you want to define the Y axis, and click to set the Y axis.

    The UCS tripod is displayed on the canvas and listed in the **Markups** palette. Placing the mouse pointer over a UCS shows its name in a screen tip.

## Manage Coordinate Systems

The **Manage Coordinate Systems** dialog box enables you to manage all coordinate-system related actions, including activating, copying, renaming, and deleting user coordinate systems.

---

**NOTE**  The WCS is read only. It cannot be moved, modified, or deleted, as indicated by the lock icon in the **Manage Coordinate Systems** dialog box.

---

**Activate a Coordinate System**

Before you can add point location measurements to a coordinate system, you must first activate it.

**To activate a coordinate system**

1   Click **Markup & Measure** tab ➤ expand the **Measure** panel.
2   Click **Manage UCS**.

   The **Manage Coordinate Systems** dialog box opens.

3   From the **Available Coordinate Systems** list, select the coordinate system to be activated.

4   Click **Activate**.

5   Click **Apply** to activate the UCS and leave the **Manage Coordinate Systems** dialog box open, or click **OK** to activate the UCS and close the **Manage Coordinate Systems** dialog box. Clicking **Close** before clicking either **Apply** or **OK**, closes the dialog box, but does not activate the user coordinate system.

   **TIP** You can also activate an existing UCS by selecting it or one of its markups in the **Markups** palette, by clicking either the markup or the UCS on the canvas, or by selecting the UCS from the drop-down list below the ViewCube.

**Copy a Coordinate System**

From the **Manage Coordinate Systems** dialog box, you can make a copy of the WCS or of another UCS.

**NOTE** You can manage the location of a selected UCS in relation to the WCS, flip the axes of a selected UCS, and offset the position of a selected UCS at any time.

**To copy a coordinate system**

1   Click **Markup & Measure** tab ➤ expand the **Measure** panel.
2   Click **Manage UCS**.

   The **Manage Coordinate Systems** dialog box opens.

3   From the **Available Coordinate Systems** list, select the coordinate system to be copied.

4   Click **Copy**.

   A copy of the selected coordinate system is added to the list.

**5** Optional: Under **Location of Origin in World Coordinates**, enter X, Y, and Z values to change the location of the selected user coordinate system origin away from the WCS.

**6** Optional: Under **Axis Directions**, check the axis or axes you want to flip.

**7** Optional: Under **Offset User Coordinates**, enter X, Y, and Z values to move the selected user coordinate system from its current location.

**8** Click **Apply** to apply changes to the copied UCS and leave the **Manage Coordinate Systems** dialog box open, or click **OK** to apply changes to the copied UCS and close the **Manage Coordinate Systems** dialog box. Clicking **Close** before clicking either **Apply** or **OK**, closes the dialog box, but does not apply any changes to the copied UCS.

### Rename a User Coordinate System

When you add or copy a UCS, it is named "User coordinates n", where "n" is a number that is one greater than the highest number currently listed. You can rename a UCS at any time.

**To rename a user coordinate system**

**1** Click **Markup & Measure** tab ➤ expand the **Measure** panel.

**2** Click **Manage UCS**.

The **Manage Coordinate Systems** dialog box opens.

**3** From the **Available Coordinate Systems** list, double-click the user coordinate system to be renamed. The UCS name text box becomes active.

**4** Type the new name for the UCS and press Enter.

**5** Click **Apply** to rename the UCS and leave the **Manage Coordinate Systems** dialog box open, or click **OK** to rename the UCS and close the **Manage Coordinate Systems** dialog box. Clicking **Close** before clicking either **Apply** or **OK**, closes the dialog box, but does not rename the user coordinate system.

### Delete a User Coordinate System

When you delete a UCS, all point location measurements associated with the UCS are also deleted.

**WARNING** Deleting a UCS deletes all markup that was created while that coordinate system was active.

**To delete a user coordinate system**

1 Click **Markup & Measure** tab ➤ expand the **Measure** panel.

2 Click **Manage UCS**.

The **Manage Coordinate Systems** dialog box opens.

3 From the **Available Coordinate Systems** list, select the user coordinate system to be deleted.

4 Click **Delete**.

5 Click **Apply** to delete the UCS and leave the **Manage Coordinate Systems** dialog box open, or click **OK** to delete the UCS and close the **Manage Coordinate Systems** dialog box. Clicking **Close** before clicking either **Apply** or **OK**, closes the dialog box, but does not delete the user coordinate system.

**TIP** In the **Markups** palette or on the canvas, right-click the UCS you want to delete and click **Delete**.

## Show or Hide Coordinate System Tripods

By default, all coordinate system tripods are hidden on the canvas. However, you can show them as desired.

**To show or hide coordinate system tripods on the canvas**

1 Click **Home** tab ➤ expand the **View** panel.

2 Check **Coordinate Systems**.

The coordinate system tripods are shown on the canvas.

**TIP** Right-click the canvas and choose **Show ➤ Coordinate Systems**.

Repeat these steps to hide coordinate systems.

Repeat this step to restore the coordinate system tripods.

# Create 3D Measurements

Before you create 3D measurement markups, you may want to set formatting options for the markups and select the desired display units and precision settings for the label text in the **Units** dialog box. Unlike 2D measurement markups, snapping is always enabled when creating 3D measurements.

**Measure the Distance Between Two Points**

**To measure the distance between two points**

1   Click **Markup & Measure** tab ➤ **Measure** ➤ **Length**.

2   On the canvas, place the mouse pointer where you want to begin the measurement and click to set the start point.

3   Optional: Using the **ViewCube**, the **Orbit** tool, or any other 3D view tools position the model so you can see where you want to set the measurement end point.

    Click **Length**          again to resume measuring.

4   Place the mouse pointer where you want to end the measurement and click to set the end point.

5   Drag to position the label and click to complete the measurement markup.

    The measurement markup displays the distance between the two points in the chosen format and units. A measurement appears in the Markups palette as "Length: xxx.xxx units". The Length tool remains active for other measurements.

    **TIP**  If the measurement lines are obscured by an object, the lines are dashed.

6   Optional: Make additional measurements.

7   To stop using the **Length** tool, press Esc or select another tool.

8   Optional: Click and drag the label along the measurement markup to reposition it.

**Measure the Distance from a Point to the Origin of a Coordinate System**

**To measure the distance from a point to the origin of a coordinate system**

1   Optional: In the **Markups** palette, select the desired UCS to make it active. If no UCS is selected or available, the current coordinate system is used.

2   Click **Markup & Measure** tab ➤ **Measure** ➤ **Point Location**.

3   On the model, place the mouse pointer where you want to create the point location measurement and click to set the point.

   **TIP** To view the measurement value without adding a measurement markup, press Esc to cancel the point location measurement.

4   Drag the label to the desired location and click to place the label.

   The measurement markup displays the distance of the point from the selected coordinate system in the chosen format and units. A measurement appears in the Markups palette as "Location: X: xxx.xxx units Y: xxx.xxx units Z: xxx.xxx units". The Point Location tool remains active for other measurements.

   **TIP** If the measurement lines are obscured by an object, the lines are dashed.

5   Optional: Make additional measurements.

6   To stop using the **Point Location** tool, press Esc or select another tool.

7   Optional: Modify the measurement markup label position by clicking and dragging it to a new location.

**Measure Distance Along a Direction Defined by an Edge**

**To measure distance along a direction defined by an edge**

1   Click **Markup & Measure** tab ➤ **Measure** ➤ **Relative Distance**.

2   Click a model edge, two vertices, or an axis on a coordinate system tripod to set a reference direction for the measurement.

3   On the model, place the mouse pointer where you want to begin the relative measurement and click to set the start point.

**4** Optional: Using the **ViewCube**, the **Orbit** tool, or any other 3D view tools position the model so you can see where you want to set the measurement end point.

Click **Relative Distance** again to resume measuring.

**5** Place the mouse pointer where you want to end the measurement and click to set the end point.

**6** Drag to position the label and click to complete the measurement markup.

The measurement markup displays the distance between the two points, relative to the set reference point in the chosen format and units. A measurement appears in the Markups palette as "Relative Length: xxx.xxx units". The Relative Distance tool remains active for other measurements.

**TIP** If the measurement lines are obscured by an object, the lines are dashed.

**7** Optional: Make additional measurements.

**8** To stop using the **Relative Distance** tool, press Esc or select another tool.

**9** Optional: Click and drag the label along the measurement markup to reposition it.

**Measure the Length/Radius of an Object**

The Length/Radius tool can measure the length of a line, the radius of an arc, or the diameter of a circle.

**To measure the length of a line, radius of an arc, or diameter of a circle**

**1** Click **Markup & Measure** tab ➤ **Measure** ➤ **Length/Radius**.

**2** On the model, place the mouse pointer over the object to be measured:
   ■ Click a line to measure its length.

   ■ Click an arc to measure its radius.

   ■ Click the center of a circle to measure its diameter.

**3** Optional: Using the **ViewCube**, the **Orbit** tool, or any other 3D view tools position the model so you can see where you want to place the label.

Click **Length/Radius** again to resume measuring.

**4** Drag to position the label and click to complete the measurement markup.

The measurement markup displays the measurement in the chosen format and units. A measurement appears in the Markups palette as "Length: xxx.xxx units", "Radius: xxx.xxx units", or "Diameter: xxx.xxx units". The Length/Radius tool remains active for other measurements.

**TIP** If the measurement lines are obscured by an object, the lines are dashed.

**5** Optional: Make additional measurements.

**6** To stop using the **Length/Radius** tool, press Esc or select another tool.

**7** Optional: Click and drag the label along the measurement markup to reposition it.

### Measure an Angle

The angle being measured depends on where you position the label. For example, when measuring a simple right angle, if the label is inside the angle, the measurement is 90°. However, if the label is outside the angle, the measurement is 270°.

**To measure an angle**

**1** Click **Markup & Measure** tab ➤ **Measure** ➤ **Angle**. 

**2** On the model, place the mouse pointer over the line or plane where you want to begin the measurement and click to set the start point.

**3** Optional: Using the **ViewCube**, the **Orbit** tool, or any other 3D view tools position the model to show other areas of the model that you may want to include in the measurement.

Click **Angle**  again to resume measuring.

**4** Place the mouse pointer over the line or plane where you want to end the measurement and click to set the end point.

**TIP** If the measurement lines are obscured by an object, the lines are dashed.

**5** Drag to position the label. The location of the label determines which angle is measured.

**6** Click to complete the measurement markup.

The measurement markup displays the angle in the chosen format and units. A measurement appears in the Markups palette as "Angle: xxx.xxx units". The **Angle** tool remains active for other measurements.

**7**   Optional: Make additional measurements.

**8**   To stop using the **Angle** tool, press Esc or select another tool.

**9**   Optional: Click and drag the label to select a different, associated angle.

**See also:**

About Markup Properties (page 145)

Secure Markups (page 146)

# Save DWF Files

## About Saving a DWF File

Saving a new file in Design Review uses the default file type. You can change the default file format in the **Options** dialog box.

Saving or renaming an existing DWF file retains the original file format when it was opened. You can change the file type each time you save from the **Save as Type** drop-down list in the **Save File** dialog box.

If you anticipate that your DWFx files will be viewed using the Microsoft XPS Viewer, be aware that the XPS file format only supports JPEG, PNG, and TIFF image files from Design Review. So when saving a DWF file as a DWFx file, any images not supported by the XPS format are converted automatically and stored in the resulting DWFx file as PNG images.

**WARNING**  If a DWFx file contains disablements, it cannot be saved as a DWF file. The DWFx file with disablements must be republished as a DWF file from the originating design program.

### About Saving an Open PDF as a DWF File

Design Review cannot save an open PDF file in the Adobe PDF file format. If you modify an open PDF file, you must save it as a DWF file to retain the modifications. When saving the PDF file as a DWF file, the PDF content is saved as raster images. You can specify the resolution of the raster images on

the **PDF Conversion** tab in the **Options** dialog box before saving. The original PDF file remains unchanged.

**To save a new, rename an existing, or save an existing file as another file type**

1 Click the application button ➤ **Save As** ➤ **Save as DWFx/DWF**.

The Save File dialog box opens.

**WARNING** Re-saving a digitally signed DWFx file, invalidates the digital signature.

2 Optional: Navigate to the location where you want to store the file.

3 In the **File Name** text box, type the name of the file.

4 Optional: From the **Save as Type** drop-down list, select the desired file format.

5 Click **Save**.

**NOTE** If no changes have been made to the open DWF file, Save is disabled.

**To save changes to an existing DWF file**

■ Click the application button ➤ **Save**.

Changes are saved, overwriting the original file.

**TIP** You can also click the **Save** button on the Quick Access toolbar.

**WARNING** Saving changes to a digitally signed DWFx file, invalidates the digital signature.

**See also:**

# Save a DWF File to Buzzsaw

Autodesk® Buzzsaw® can help your organization centralize project-related documents, simplify communication, and streamline collaboration. When saving a DWF file from Design Review to Buzzsaw, the original file format is retained by default. If the file is a DWF file, it is saved to Buzzsaw as a DWF file. If a file is a DWFx file, it is saved to Buzzsaw as a DWFx file.

**NOTE** When you save a file to Buzzsaw, your Buzzsaw user name, rather than your Windows login name becomes the author property of the file.

**To save a DWF file to Buzzsaw**

1   In Design Review, save any modifications you have made to the open file.

2   Click the application button ➤ **Save As** ➤ **Save to Buzzsaw**.
    The **Buzzsaw Login** dialog box opens.

3   Enter your **User Name**, **Password**, and the **Site**.

    **TIP** You can also have Design Review remember your Buzzsaw password.

4   Click **OK**.
    The **Save File to Buzzsaw** dialog box opens.

5   Optional: Navigate to the location where you want to store the DWF file.

6   Optional: In the **File Name** text box, type the name of the file.

7   Click **Save**.

8   After the file has been transferred successfully to the Buzzsaw site, click **OK**.

**See also:**

# Save a DWF File to Freewheel

The Autodesk Project Freewheel® website allows you to view and collaborate with design data without installing additional software. The ability to save a DWF file to the Autodesk Project Freewheel website for online reviewing has some prerequisites:

■ An active Internet connection

■ The Autodesk® Freewheel® plug-in must be installed

■ An Autodesk Consolidated Login user ID and password

With an active Internet connection, the first time you click the application button ➤ **Save As** ➤ **Save to Freewheel**, a browser window opens, offering you an opportunity to download and install the Freewheel plug-in. The next time, when you save to Freewheel, you will be prompted register or to sign in, if you already have a user ID and password.

IMPORTANT   **Save to Freewheel** requires an active Internet connection.

**To save a DWF file to Freewheel**

1 Open the DWF file you want to save to Freewheel.

2 Click the application button  ➤ **Save As** ➤ **Save to Freewheel**.
   The **Publish to Freewheel** dialog box opens. You are prompted to accept the Terms of Use.

3 Click **OK**.
   A browser window opens and you may be prompted to log in.

4 Enter your **User ID**, **Password**, and click **Submit**.
   The DWF file is shown in a browser window.

**See also:**

Get Design Review Plug-ins (page 136)

# Sign DWFx Files

## About a Digital Signature

A *digital signature (page 282)* is a method used to maintain file authenticity and to provide a safe environment for sending and receiving data. A digital signature provides several benefits.

■ The signature in a DWFx file informs the viewer if the file has been altered or saved since it was signed.

■ The digital signature has a copy of the certificate used to sign the DWFx file, so the certificate and associated information can be viewed in Design Review.

A digital signature is not the same as a digitized signature. While a digital signature helps prove your identity and file authenticity, a digitized signature is nothing more than an electronic version of your own hand-written signature. A digitized signature can be forged and copied, and has no real security value.

Before you can add a digital signature to a file, you must have a valid public key certificate, or certificate, typically issued by a certificate authority, installed on your computer. A certificate contains a name, serial number, expiration date, and other information that certifies the digital signature. For more information about obtaining a certificate, search the Web for "digital certificate".

### About Certificates

Certificates work on a trust hierarchy, or chain. In a trust hierarchy, the root certificate is the certificate of the issuing certificate authority. Browsers, such as Microsoft Internet Explorer, already include the root certificates of the major certificate vendors, making those certificates automatically trusted.

Before you can digitally sign a DWFx file, you must first have certificate installed on your computer. Similarly, when you receive a DWFx file that contains a digital signature from a certificate authority that is not recognized by your computer, for example, a certificate issued by your company's internal IT department, you need to install the sender's root certificate before you can determine if the certificate in the digital signature is valid. To learn how to install a certificate, search the Windows Help file for "certificate".

# Add a Digital Signature to a DWFx File

Design Review 2012 can be used to digitally sign DWFx files. Only the DWFx file format supports digital signatures. The DWF file format does not support digital signatures. When attempting to digitally sign a DWF file, you are prompted to save it as a DWFx file.

If a DWF file contains markup-, measure-, or printing-disablements, it cannot be converted from the DWF to DWFx file format in Design Review. Consequently, it is not possible to sign disabled DWF files. The DWF file with disablements must be republished as a DWFx file from the originating design program before it can be signed using Design Review.

Digitally signed DWFx files can only be viewed in Design Review2012. If recipients have an older version of Design Review, these versions do not recognize that the DWFx file was digitally signed.

NOTE  **Add Digital Signature** is not available when viewing an embedded DWFx file. However, you can view digital signature details by clicking the digital signature icon in the **Canvas toolbar**.

In some cases, an older version of Design Review may present a warning dialog box, but the message does not specifically identify that the DWFx file was digitally signed. It only indicates that the file contains an unsupported feature. Whether or not a warning is shown, the file still opens. As a result, the recipients using an older version of Design Review may unknowingly save changes to the signed file, invalidating the digital signature. Before you distribute a digitally signed file, notify recipients they need to upgrade to the latest version of Design Review to retain the valid digital signature.

WARNING  The Microsoft XPS Viewer does not support digitally signed DWFx files.

## Working with Digitally Signed DWFx Files

Once you have a digitally signed DWFx file open, you can view it like any other file, but modifying the DWFx file content in any way invalidates the original digital signature if you re-save the file. The next person to open that DWFx file is notified that the original digital signature is invalid, suggesting that the DWFx file was modified since it was originally signed.

NOTE  Before digitally signing a DWFx file, you must have a digital certificate installed.

**To add a digital signature to a DWFx file**

1   If necessary, open the DWFx file you want to digitally sign.

2   Click the application button ➤ **Security** ➤ **Add Digital Signature**.



If the DWFx file is already digitally signed, click **Yes** to continue.

The **Add a Digital Signature** dialog box opens.

3   Select a valid certificate.

4   Optional: View the certificate information. To return to the **Add a Digital Signature** dialog box, click **OK**.

5   To digitally sign the DWFx file, click **OK**.

If prompted to save the file as a DWFx file, click **Yes** to continue.

The **View Signature Details** dialog box opens.

6   Click **OK**.

On the **Canvas toolbar**, a digital signature icon indicates the DWFx file was signed successfully. 

**Re-sign a DWFx File**

After you sign a DWFx file, you may need to make additional modifications to the same file before offering it to others. Saving changes invalidates your first signature, so you need to sign the DWFx file again.

**See also:**

# View Digital Signature Details

When a DWFx file contains a digital signature, upon opening the file, the **View Signature Details** dialog box opens showing information about the signature.

■   Validity of the digital signature

- Whether or not the file was modified since signing

- A summary pertaining to the certificate used to sign the file

    **NOTE** Click **View Certificate** for more details about the certificate.

- The name of the person or organization that signed the file

Once a digitally signed DWFx file is open, a digital signature icon is also shown on the **Canvas toolbar**. 

A digital signature may be valid or invalid. A digital signature may be invalid if the file was modified after it was digitally signed.

**To view digital signature details of a signed DWFx file**

1 Open the **View Digital Signature** dialog box.
   - Open a digitally signed DWFx file.

   - Click the application button ➤ **Security** ➤ **View Signature Details**. 

   - On the **Canvas toolbar**, click the digital signature icon. 

   The **View Signature Details** dialog box opens, showing whether or not the digital signature is valid, whether or not the file has been modified since being signed, and who signed the DWFx file.

2 Optional: For more details, click **View Certificate**. The **Certificate** dialog box opens, showing additional details.

   When done viewing details, click **OK**.

3 Click **OK** to close the **View Signature Details** dialog box.

# Print Files

## About Print-Disabled DWF Files

In addition to disabling measurement and markup, designers using Autodesk® Inventor® 2008 or later can prevent some or all sheets in a published DWF file from being printed. If the DWF file contains sheets that are not

print-disabled, the **Print** command is enabled even when a print-disabled sheet is shown on the canvas.

---

**NOTE** If a file contains disablements, an icon is shown on the **Canvas toolbar** (

 ) and in the **Restrictions** column (  ) of the **List View** palette.

---

**See also:**

About Disabled DWF Files (page 44)

# About the Print Dialog Box

The **Print** dialog box enables you to control all Design Review printing options.

**Printer**

**Name** From the **Name** drop-down list, select an available printer. After selecting a printer, more information about that printer is shown. **Status** shows the condition of the selected printer. **Type** shows information about the selected printer. **Location**, if available, shows physical location information about the selected printer. **Comments**, if available, shows notes and details about the selected printer.

**Properties** Click **Properties** to open a dialog box provided by the selected printer manufacturer. See the manufacturer Help for information about a specific printer.

---

**NOTE** Some manufacturer printer properties can conflict with properties defined in Design Review. If so, the last option that you selected (whether in Design Review or in the manufacturer print dialog box) is applied.

---

**Always Use This Printer** Select to make the printer in the **Name** drop-down list the default printer used by Design Review. If left unselected, Design Review will revert back to using the system default printer the next time Design Review starts.

**Use HP Instant Printing** Only available if you select an HP printer with Instant Printing capabilities from the **Name** drop-down list. Opens the **HP Instant Printing** dialog box.

**Print to File** Creates a file, in a format that contains raw printing data, which you can print from a command prompt. You cannot open the file.

## Paper

**Size**  Select a paper size from the drop-down list. If the printer changes, that printer's default paper size is selected.

## Print Range

**All**  Prints all sheets in the file. **All** is enabled only when **Full Page** is selected in the **View** drop-down list.

**View**  **Full Page** prints the complete drawing, regardless of what is seen on screen. **Current View** prints the view on the canvas when the **Print** dialog box was invoked.

**Current Sheet Only**  Prints only the sheet currently shown on the canvas.

**Pages From**  Type a list of sheets separated by commas (1, 5, 7) or a range of sheets separated by a hyphen (1-7). If the print range contains one or more print-disabled pages, a dialog box opens listing the print-disabled content. **Pages From** is enabled only when **Full Page** is selected.

## Page Handling

**Copies**  Select the number of copies you want to print.

**Collate**  Determine how multiple copies are printed. **Collate** is enabled only when more than one copy is selected.

**Reverse Order**  If you have selected multiple sheets, select **Reverse Order** to print the last sheet first.

**Choose Paper Source by DWF Page Size**  Prints the file at a size that best matches the DWF size when it was published. **Choose Paper Source by DWF Page Size** is unavailable when printing 3D models.

## Scaling and Alignment (2D Only)

**Fit to Page**  Fits the drawing to the chosen paper size reducing or increasing the scale accordingly.

**Scale**  You can scale sheets as a percentage relative to the published sheet size, choose real-world scales from a drop-down list of values, or enter a **Custom** scale. The **Custom Scale** dialog box enables you to enter the number of inches (or millimeters) equal to the number of drawing units.

**Tile Pages**  **Tile Pages** prints the sheets across several pieces of paper. **Scale** must be selected to enable this option.

**Clip Pages**  When a drawing has been scaled, it may not fit to the page precisely. **Clip Pages** positions the printed pages according to the selected alignment. **Scale** must be selected to enable this option.

## Orientation

**Portrait**  Prints the longest side vertically.

**Landscape**  Prints the longest side horizontally.

### Print Color

**Sheets**  Specify a color setting for the file. **Color** prints the sheets and models in color. **Black and White** prints the 2D sheets in black and white and the 3D models in grayscale. **Grayscale** prints the sheets and models in shades of gray. This color setting only affects printing colors. It does not affect how content is shown on the canvas.

**Markups**  Specify a color setting for the markups. **Color** prints the markups in color. **Black and White** prints the markups in black and white. **Grayscale** prints the markups in shades of gray. This color setting only affects printing colors. It does not affect how markups are shown on the canvas.

### Preview

**Preview**  Shows a preview of the open file with details, such as **Original Size**, **Paper Size**, **Print** (shows the **Print RangeView**), and **Zoom** for the current view of 2D sheets. Use the buttons below the **Preview** area to display other sheets and models to be printed. **Print Range** determines which sheets are shown in the **Preview** area.

### Advanced

**Pre-process Bitmaps**  In the **Advanced Print Options** dialog box, in the **Pre-process Bitmaps** group. Select **Turn Data into a Bitmap Before Printing** if experiencing printer or output issues for 2D content. Consider this setting if the content being printed contains gradients or a high number of drawn objects, markups, or images. This setting does not affect 3D content.

**Resolution**  Depending on the printer selected, **Automatic** uses the default print quality and the **User Defined** drop-down list provides specific dpi values or a list of generic quality presets, such as **Draft**, **Low**, **Medium** or **High**. Reducing the resolution may improve printing speed. If Design Review cannot determine these printer capabilities, **Resolution** options are disabled.

**Color Quality**  By default, **Color Quality** will be set to **High** for highest output quality. Reducing the color quality may improve printing speed.

**Advanced** print settings only affect raster files and only persist for the current session. When you exit Design Review, your Advanced print settings are discarded.

**See also:**

# Print an Open File

You can print one or more sheets from an open DWF file. You also can print different views of the sheets and models, and preview your pages before printing.

Unless you select a new paper size, 3D models print on a default paper size. The model is matched to the orientation that fits it best, portrait or landscape, and then printed as it appears on screen. Viewing choices made, such as zoom, object visibility, and cross sections are also printed.

Once the desired printing options have been set, you can use the **Quick Print** tool to send the open file directly to the printer. **Quick Print** uses the existing print settings, bypassing the **Print** dialog box.

**To print an open DWF file**

1   Optional: If you want to print the **Current View**, prepare the view so that it appears on the canvas the way you want it printed.

     **NOTE** If statuses have been added to callout markups, you can control whether or not the markup status colors are printed in the **Options** dialog box, on the **General** tab, by changing the **Use Markup Status Color Highlighting** option.

2   Click the application button ➤ **Print** ➤ **Print**.

     The **Print** dialog box opens.

     **TIP** You can also click the **Print** button on the **File** panel and the Quick Access toolbar.

3   Optional: Select printing options.

4   Optional: Below the **Preview** area, click the Left and Right Arrows to preview the pages in the **Print Range**.
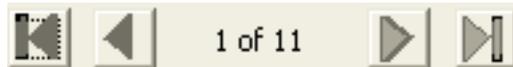
**NOTE** If a sheet or model is print-disabled, in the **Preview** area, there is a red circle with line through it when attempting to preview the page. You are prompted about the disabled content and those sheets or models do not print.

**5** Click **OK**.

If you have chosen to print several pages and scale them, a message opens warning you that the pages will print across several pages, as the drawing is larger than the printable area. Click **OK** to close the dialog box.

**To print an open file using the existing printer settings**

■ Click the application button ➤ **Print** ➤ **Quick Print**. 

**TIP** You can also use **Quick Print** from the **Print** button on the **File** panel and the **Quick Access** toolbar. 

**To print a sheet or sheets from the Thumbnails or List View palette**

**1** In the **Thumbnails** or **List View** palette, select the sheet or sheets to be printed.

**2** Right-click one of the sheets you want to print and select **Print**.

The **Print** dialog box opens. Under **Print Range**, the selected sheets are shown in the **Pages From** text box.

**3** Optional: Select printing options.

**4** Click **OK**.

Only the selected sheets are printed.

**See also:**

# Print to File

Besides printing to paper, you can also postpone printing by saving the view and print settings to a PRN file. Because the file is an intermediary step to printing, it is referred to as printing to a file. The PRN file is saved with a .prn file extension, MyDWF.prn, for example.

Printing to a file is helpful in these situations:

■ To store 2D or 3D views for later printing.

■ To store settings when a printer is not available (for example, when using a laptop at the job site). You can then continue working with other views and settings.

**To create a PRN file**



1 Click the application button ➤ **Print** ➤ **Print**.
  The **Print** dialog box opens.

2 Within the **Printer** grouping, check the **Print to File** option.

3 Optional: Set any other printing preferences.

4 Click **OK**.
  The **Print to File** dialog box opens.

5 Browse to the folder in which you want to save the file.

6 Optional: In the **File Name** text box, type a file name.

7 Click **Save**.

You can print the PRN file from a *command prompt (page 282)* .

**To print a PRN file**

1 Click **Start ➤ All Programs ➤ Accessories ➤ Command Prompt**.
  The command prompt window opens.

  **NOTE** To display the command prompt window in Windows Vista, click **Start**. In the **Start Search** text box, type `cmd` and press Enter.

2 If necessary, type `cd C:\`

3 Type `copy filename.prn lpt1 /b`

4 Press Enter.

If the printer is connected to a network, replace `lpt1` with the network path and printer name. Ask your network administrator for assistance, if necessary.

## Instant Printing with HP Printers

Hewlett-Packard (HP) has partnered with Autodesk to provide users of Design Review with a one-click method of printing called HP Instant Printing® (HPIP). For a list of printers that have HP Instant Printing capabilities, see the HP Instant Printing website.

If your default printer is an HP printer with Instant Printing capabilities, the HP Instant Printing button  is added to the **Print** choices on the application menu and the **Print** button  on the **File** panel. Clicking this button enables you to print the current DWF file instantly, using the previously selected HP print settings.

Available on Windows XP and Windows Vista®, HP Instant Printing automatically detects the paper roll size on supported HP plotters and prints all 2D pages. By default, it does not print 3D pages. To print 3D pages, uncheck the **Do Not Print 3D Models** option. With HP Instant Printing, you cannot specify individual pages to print. To print individual pages, use the standard **Print** dialog box.

If the drawing cannot be printed at full scale with the paper size you selected, HP Instant Printing tries to print it at half-size (1:2 or 50%). If the drawing cannot be printed half-size, HP Instant Printing prints it fitted to the page. A watermark is placed diagonally over the printed drawing, saying HALF SIZE or FIT TO PAGE accordingly.

Unless you have selected a different paper size, 3D sheets print on a default paper size. The model is matched to the orientation that fits it best: portrait or landscape and is printed as shown on the canvas. Perspective, object visibility, and cross sections are printed.

**To print 2D or 3D content**

1   Click the application button ➤ **Print** ➤ **Print**. 
    The **Print** dialog box opens.

**2** From the **Name** drop-down list, select an HP printer that supports instant printing.

**3** Check the **Use HP Instant Printing** option.

**4** Optional: To print 3D sheets, uncheck the **Do Not Print 3D Models** option.

**5** Optional: Select a paper size.

**6** Click **OK**.

All 2D sheets are printed. (3D sheets are printed if you have unchecked the **Do Not Print 3D Models** option.)

**TIP** If your default printer is HPIP-compatible, you can also use **HP Instant**

**Printing** from the **Print** button on the **File** panel. 

**See also:**

You can print DWF files directly from Windows Explorer or from the desktop.

**To print DWF files from Windows Explorer or the desktop**

**1** Display the folder that contains the DWF file or files to be printed.

**2** Select one or more DWF files.

**3** Right-click the selection and select **Print**.

Each DWF file opens briefly in Design Review and prints using the default printer settings.

# Batch Print DWF Files

## Print Several DWF Files at a Time

Batch printing allows you to select multiple DWF files from local or network drives and print them all at once. You can even keep those print settings to be used again, saving you time and effort.

If a DWF file being added to a batch print job ( *BPJ (page 281)* ) contains print-disabled content, only the content for which printing has not been disabled prints and a dialog box opens listing the print-disabled content. The print-disabled content is also listed in the batch print log as an error.

**NOTE** The Batch Print Wizard provides the opportunity to use HP Instant Printing.

**To print several DWF files at a time**

1 Click the application button ➤ **Print** ➤ **Batch Print**.
   The **Batch Print Wizard** dialog box opens.

2 Click **Next**.
   The **Select DWF Files to Print** window opens showing local and shared network folders.

   **TIP** If you have a saved BPJ file, you can open it by clicking **Open Saved Batch Print Job**.

3 Select DWF files to print.

   1 Locate and select the files or folders containing DWF files that you want to print.

   2 To add the files to the batch print list, click the **Add** button.
   To remove selected DWF files from the batch print list, click the **Remove** button.

   To reorder the DWF files in the batch print list, click the **Up**

   and the **Down** buttons.

   3 Click **Next**.
   The **Choose Print Settings for the DWF Files** window opens.

   **TIP** If you want to return to a previous window, click **Back**. To stop batch printing, click **Cancel**.

**4** Optional: Specify printer settings.

> **1** Select a file and click **Print Setup**.
>
> The **Print** dialog box opens.
>
> **2** Select the print options for the DWF file and click **OK**.
>
> **3** Optional: Specify printer settings for the other DWF files in the batch print list.
>
> **4** Click **Next**.
>
> The **Save or Start Batch Print Job** window opens.

**WARNING** You cannot set print options for a folder directly. You can only set print options for an individual file. If you want to set print options for a folder, add the individual files from the folder and you can set print options for each.

**5** Optional: To view a text file of the print job immediately after printing, check the **View Batch Print Log When Job Is Complete** option.

**6** Optional: Click **Save**.

The **Save As** dialog box opens.

By default, the **File Name** text box shows the file name of the first DWF file or folder in the batch print queue. The files are saved with a .bpj file extension. You can edit a BPJ file using any text editor.

In the **File Name** text box, type a file name.

Click **Save**

**7** Click **Print**.

**8** When prompted, click **Yes** to save the batch print job as a BPJ file and to continue printing.

Click **No** to discard batch print settings, but continue printing.

Click **Cancel** to stop the Batch Print Wizard.

**NOTE** While DWF files are printing, you can click **Cancel Batch Print Job**.

**See also:**

## Start a Saved Batch Print Job

If you have saved the print settings for DWF files as a .bpj (batch print job) file, you can print them using the Batch Print Wizard. Only one batch file can be printed at a time.

**To start a batch print job**

1 Click the application button ➤ **Print** ➤ **Batch Print**.

The **Batch Print Wizard** dialog box opens.

2 Click **Next**.

The **Select DWF Files to Print** window opens.

3 Click **Open Saved Batch Print Job**.

The **Open** dialog box opens.

4 Locate and select the BPJ file.

5 Click **Open**.

The **Choose Print Settings for the DWF Files** window opens.

6 Click **Next**.

The **Save or Start Batch Print Job** window opens.

7 Optional: To view a log file of the print job immediately after printing, check the **View Batch Print Log When Job Is Complete** option.

8 Click **Print**.

The **Printing Batch Print Job** progress dialog box opens, showing the progress of the batch printing job. To cancel printing, click **Cancel Batch Print Job**.

## Start a Batch Print Job from the Command Prompt

Before you begin, identify the locations and file names for the Design Review application (DesignReview.exe) and the BPJ file that you want to run. You need this information to perform this procedure.

**To start a batch print job from the command prompt**

**1** Click **Start ➤ All Programs ➤ Accessories ➤ Command Prompt**. The command prompt window opens.

**NOTE** To display the command prompt window in Windows Vista, click **Start**. In the **Start Search** text box, type cmd and press Enter.

**2** At the command prompt, type cd C:\Program Files\Autodesk\Autodesk Design Review\

**NOTE** If you installed Design Review to a different location, type that location instead.

**3** Press Enter.

**4** At the command prompt, type DesignReview.exe <BPJ Location and File Name>

Replace <BPJ Location and File Name> with the actual BPJ file path and file name. For example, C:\My Batch Print.bpj

**5** Press Enter.

The DWF files listed in the BPJ file are printed using the saved print settings.

# Share DWF Files

## About Sharing DWF Files

Besides providing printed copies, you can share DWF files several ways.

- As an email attachment
- Save DWF files to a shared folder on a company network
- Save DWF files to an Autodesk® Buzzsaw® or Autodesk® Streamline® project folder
- Upload DWF files to an FTP server
- Save DWF files to a disk, memory card, or other device
- Embed DWF files in other file types
- Use the Autodesk® Freewheel® plug-in to share DWF files on the Autodesk Project Freewheel website

**Sharing DWF Files with Other Autodesk Products**

You can send a DWF file to your clients or anyone you want to review your designs. The reviewer can open the DWF file in Design Review, mark up the file electronically, and then send it back. The marked-up DWF file can then be opened in many Autodesk programs where the markups can be addressed. After making changes in the Autodesk program, you can republish the DWF file and send it out for another review. Here are some Autodesk programs that can take advantage of DWF-related capabilities.

■ AutoCAD® and AutoCAD-based products

■ Autodesk® Buzzsaw®

■ Autodesk® Design Review

■ Autodesk® FMDesktop®

■ Autodesk® Inventor®

■ Autodesk® Productstream®

■ Autodesk Streamline®

■ Autodesk® Vault

■ Revit® and Revit-based products

For more details about how these programs can be used with DWF files, see the Help file for each program.

**See also:**

Learning Resources (page 276)

Embed a DWF File in Other File Types (page 240)

# Email an Open DWF File from Design Review

You can email an open DWF file with the most current data to a customer. If new markups were added, the latest modifications are included, and you are prompted to save the DWF file.

**WARNING** The Send command is only available if the computer includes a *MAPI-enabled (page 283)* email program, such as Microsoft® Office Outlook®. This feature may not be compatible with 64-bit operating systems.

**To email an open DWF file from Design Review**

1   Open the DWF file you want to send, make any necessary modifications, and save the DWF file.

2   Click the application button ➤ **Send Email**. 

    **NOTE** When sending an older DWF file, its file format is updated to the latest version automatically.

    The default email program opens, creating an email message. The subject shows the name of the DWF file being sent. The DWF file is attached to the email automatically. In the email message, a link to the free Design Review program is provided. This link enables recipients to download the program if they do not have it installed already.

    **TIP** You can also click the **Send Email** button  on the Quick Access toolbar.

3   In the new email message, type one or more email addresses into the **To**, **Cc**, and **Bcc** text boxes.

4   Optional: Modify the contents in the **Subject** text box.

5   Optional: Type a message.

6   Click **Send**.

    The email message with the attached DWF file is sent.

# Email DWF Files from Windows Explorer

You can send DWF files to email recipients directly from Windows Explorer or from the desktop.

WARNING  The **Send** command is only available if the computer includes a
*MAPI-enabled (page 283)* email program, such as Microsoft® Office Outlook®. This feature may not be compatible with 64-bit operating systems.

**To email DWF files from Windows Explorer or the desktop**

1   Display the folder that contains the DWF file or files to be emailed.

2   Select one or more DWF files.

**3** Right-click the selection and select **Email**.

   The default email program opens, creating an email message. The subject shows the name of the DWF file that you being sent. (If multiple DWF files were selected, only the name of the DWF file that you right-clicked on to choose **Email** is shown in the subject.) Each selected DWF file is attached to the email automatically. In the email message, a link to the free Design Review program is provided. This link enables recipients to download the program if they do not have it installed already.

**4** In the new email message, type one or more email addresses into the **To**, **Cc**, and **Bcc** text boxes.

**5** Optional: Modify the contents in the **Subject** text box.

**6** Optional: Type a message.

**7** Click **Send**.

   The email message with the attached DWF file or files is sent.

## Publish and Email a New DWF File from Windows Explorer

You can publish a new DWF or DWFx file and email it directly from Windows Explorer or from the desktop. To use the Publish and Email commands on a non-DWF file, the program that originally created the file must be installed and have built-in, DWF and DWFx publishing capabilities.

If that program does not have built-in publishing capabilities, the computer attempts to use Autodesk DWF Writer if it is installed. (Autodesk DWF Writer 2008 does not publish DWFx files; 2009 is required.) Some supported, non-DWF file formats include: text files, PDF files, Word documents, Excel workbooks, and PowerPoint presentations. Only one non-DWF file can be published and emailed at a time.

For the best DWF publishing results, use a program's built-in publishing capabilities.

---

**WARNING** If Autodesk Inventor 11 or earlier is installed, right-clicking Inventor files does not display either the **Publish DWF and Email** or the **Publish DWFx and Email** command. This feature may not be compatible with 64-bit operating systems.

---

**To publish and email a new DWF file from Windows Explorer or the desktop**

**1** Display the folder that contains the non-DWF file to be published.

**2** Specify the format you want to publish and send.
- Right-click the non-DWF file and select **Publish DWF and Email** to publish and send a DWF file.

- Right-click the non-DWF file and select **Publish DWFx and Email** to publish and send a DWFx file.

The file opens briefly in its original program, where it is published.

The default email program opens, creating an email message. The subject displays the name of the published DWF file, which is attached to the email automatically. In the email message, a link to the free Design Review program is provided. This link enables recipients to download the program if they do not have it installed already.

**3** In the new email message, type one or more email addresses into the **To**, **Cc**, and **Bcc** text boxes.

**4** Optional: Modify the contents in the **Subject** text box.

**5** Optional: Type a message.

**6** Click **Send**.

The email message with the attached DWF or DWFx file is sent.

**See also:**

About DWF Writer (page 134)

Publish a New DWF File from Windows Explorer (page 134)

# Copy Text from the Properties Palettes

To share pieces of information contained in DWF files, you can copy sheet, markup, and *object (page 284)* properties and then paste them into another program.

By default, properties are grouped alphabetically in the three properties palettes: **Sheet Properties**, **Markups Properties**, and **Object Properties**.

---

**TIP** Right-clicking in either the **Sheet Properties** or **Object Properties** palettes and choosing **View as Table** shows the properties in table rows.

---

**To copy text from a properties palette**

1 On the canvas or in the **Thumbnails** or **List View** palette, select the markup, object, or sheet that contains the properties you want to copy.

The related properties palette opens. If not, display the palette by clicking **Home** tab ➤ **Workspace** panel ➤ **Show/Hide Palettes** drop-down list and selecting the related properties palette.

2 In the appropriate properties palette, select the desired property or properties you want to copy.

3 Right-click the selection and select **Copy**.

4 **Paste** the copied property text in the desired location.

**See also:**

Use Palettes  (page 20)

# Copy the Current View

You can copy an image of all the contents shown on the canvas and paste the image into another program.

**To copy the current view of the canvas**

1 In the open DWF file, display the sheet or model you want to copy.

2 Optional: Modify the view of the canvas contents.

3 Click **Home** tab ➤ **View** panel ➤ **Copy Current View**.

The current view of the canvas is copied.

4 **Paste** the copied image in the desired location.

**See also:**

Create a New 2D Sheet by Taking a Snapshot (page 140)

# Compare 2D Content

## About Comparing 2D Content

Design Review can be used to compare differences in vector content (geometry) between two 2D sheets in separate DWF files that have the same sheet size and unit settings. Any changes between the 2D sheets are identified as separate markups, one for Additions and one for Deletions, in the open DWF file. The Additions markup identifies the geometry that would need to be added to the original sheet to make it match the second sheet. The Deletions markup identifies the geometry that would need to be deleted from the original sheet to make it match the second sheet.

For instance, a contractor receives a new version of a DWF file, but changes were not identified by the architect. The contractor uses Design Review to compare the original sheet to the revised sheet to identify differences in the geometry, including changes in polyline attributes such as line pattern or line weight.

**Design Review Comparison Capabilities**

| Design Review Can Compare | Design Review Cannot Compare |
| --- | --- |
| Polyline changes (points added, changed, and deleted, line pattern, line weight, line end cap, and line join style) | 3D sheets |
| Polygon changes (vertices added, changed, and deleted, edge pattern, and edge weight) | Changes to 2D polylines (polyline colors, fill colors, or fill patterns such as hatch patterns) |
| Text (insertion point, text string, font name, and font size) | 2D sheet scale or dpi |
| | Tabular data |
| | Metadata from object and sheet properties |
| | Raster images (image size or pixel colors) |

| Design Review Can Compare | Design Review Cannot Compare |
| --- | --- |
| | Markups (text boxes, freehand, callouts, measurements, stamps, or symbols) |

**Unexpected Comparison Results**

Occasionally, comparing DWF files may produce some unexpected results. Since DWF is a published file format, DWF files are susceptible to the output eccentricities of publishing programs.

For instance, while testing Design Review comparison capabilities, an instance was found where Autodesk Inventor published a polyline differently in a second DWF file. In the first DWF file, the polyline was a single set of points. When publishing a subsequent DWF file, the same polyline was published as two separate sets of points. Although the polyline had not noticeably changed, and it displayed and printed the same in both DWF files, the subtle difference was detected during comparison. Be aware that Design Review will identify all geometric differences between two DWF files, whether the difference is made intentionally by a designer or unintentionally by an anomaly in a publishing program.

Another situation that may lead to unexpected results is when a DWF file being compared contains both vector (geometry) and raster (pixels) content. Since Design Review only compares vector content, the raster content is not part of the comparison.

One case where content may become a mixture of raster and vector is when 2D DWF files are published from DWG files whose model spaces are 3D. When a 2D DWF file is published from a paper space layout, a 2D view of the 3D model space is generated. This results in a raster image being created in the DWF file.

**TIP** To identify which content is raster content, zoom in on the suspected raster content. The raster content will become increasingly pixelated the more you zoom in.

## About the Compare Dialog Box

The **Compare** dialog box enables you to specify which 2D sheet to use in your comparison and to control the color of the comparison markups once the comparison has been made.

**Select File**  Click **Browse** to locate the desired DWF file. For larger DWF files, a progress bar will display to indicate the status of opening the file.

**Select Sheet to Compare**  Once the DWF File to be compared is loaded, large thumbnails of the sheets in the file are shown. You can control how the sheets are shown in the **Compare** dialog box by clicking the **Large Thumbnails**

![Large Thumbnails icon] , **Small Thumbnails** ![Small Thumbnails icon] , or **List View** ![List View icon] buttons.

**Options**  Opens the **CompareOptions** dialog box, enabling you to change the colors of the Additions and Deletions markups once the comparison has been made.

**See also:**

**To identify differences between two 2D sheets**

1   Open the original DWF file that contains the 2D sheet that is the basis of the comparison.

2   Click **Tools** tab ➤ **Canvas** panel ➤ **Compare Sheets**. ![Compare Sheets icon]

The **Compare** dialog box opens.

3   To the right of the **Select File** text box, click **Browse**.

The **Open File** dialog box opens.

4   If necessary, navigate to where the DWF file that contains the 2D sheet you want to compare is stored.

5   Select the DWF file and click **Open**.

The sheets are shown in the **Compare** dialog box.

6   Optional: Change the view of the sheets by clicking the Large

Thumbnails ![Large Thumbnails icon] , **Small Thumbnails** ![Small Thumbnails icon] , or **List View** ![List View icon] buttons.

7   Optional: Click **Options**.

The **Compare Options** dialog box opens.

Change the colors of the **Additions** and **Deletions** markups once the comparison has been made.

Click **OK**.

**8** Select the sheet to be compared to the sheet currently shown on the canvas and click **OK**.

Once the comparison has been performed, the original DWF file sheet may show differences on the canvas that can be saved or printed. The differences are also shown in the **Markups** palette as "Additions from comparison..." and "Deletions from comparison...". These comparison markups can be deleted if additional comparisons are required.

**TIP** As markups, the comparison results can be hidden or shown by clicking **Home** tab ➤ **View** panel ➤ **Show Markups**.

**See also:**

Markup Basics (page 143)

Markup 2D DWF Files (page 160)

Change Default Color Options (page 254)

# Embed a DWF File in Other File Types

## About Embedding DWF Files

Putting a DWF file in any program that uses *ActiveX (page 281)* controls, such as Buzzsaw, is referred to as embedding a DWF file.

When the embedded DWF file is active, the default DWF viewing program limits the amount of Design Review application window that is shown. Typically in embedded situations, the Design Review ribbon only shows the tab names. Clicking a tab name temporarily opens the ribbon so you can access the appropriate tools. Since embedded mode does not show the Quick Access toolbar, the tools typically found on the Quick Access toolbar are shown on the **File** panel on the **Home** tab.

**TIP** To save a copy of an embedded DWF file, right-click and select **Save As**.

**Limitations of Embedded DWF Files**

Some Design Review features are not available in embedded DWF files.

■ You cannot add a digital signature.

■ You cannot create a New file.

- You cannot access plug-ins.
- You cannot manage workspaces.

To access these capabilities, open the embedded file in Design Review.

**See also:**

# Embed a DWF File in Microsoft Word or PowerPoint Files

You and your customers must have Microsoft® Word or Microsoft® PowerPoint® 2007 or later, and a copy Design Review installed to work with DWF files embedded in documents and presentations.

**IMPORTANT** Embedding DWF files is not supported in 64-bit versions of Microsoft Word or PowerPoint.

**To embed a DWF file in a Microsoft Word document**

1 Open the Word document to receive the DWF file.

2 In the open document, place the insertion point where you want to embed the DWF file.

3 Start Windows Explorer and locate and select the 2D or 3D DWF file you want to embed. If necessary, position the Windows Explorer window so you can see the location where you want to embed the DWF file.

4 From Windows Explorer, drag the DWF file over the location in the receiving document and drop the DWF file in place.

5 Optional: To resize the embedded object, drag a corner or side handle to the desired dimensions.

   **NOTE** The embedded object can only be resized when inactive.

6 Optional: To interact with the embedded DWF file, double-click it. To exit the embedded DWF file, click outside the DWF file area.

**To embed a DWF file in a PowerPoint presentation**

1 Open the PowerPoint presentation to receive the DWF file.

**2** In the open presentation, display the slide where you want to embed the DWF file.

**3** Start Windows Explorer and locate and select the 2D or 3D DWF file you want to embed. If necessary, position the Windows Explorer window so you can see the location where you want to embed the DWF file.

**4** From Windows Explorer, drag the DWF file over the location in the receiving slide and drop the DWF file in place.

**5** Optional: To resize the embedded object, drag a corner or side handle to the desired dimensions.

**NOTE** You can only resize the embedded object when it is inactive.

**6** Optional: To interact with the embedded DWF file in Normal mode of PowerPoint, double-click it. To exit the embedded DWF file, click outside the DWF file area.

**Interacting with an Embedded DWF in Slide Show Mode of PowerPoint**

Embedding a DWF file in a PowerPoint slide using the drag and drop method is a good way to share and show a DWF file when giving a presentation. However, if you want to interact with the DWF file during a presentation, for instance, to change the view of a model or to add a markup, embed the DWF using a slightly different method.

**WARNING** Interacting with an embedded DWF file using PowerPoint 2007 may require you to modify PowerPoint ActiveX settings. Make this security modification at your own risk.

**PowerPoint 2007: To interact with an embedded DWF file in Slide Show view**

**1** In PowerPoint 2007, open the PowerPoint presentation to receive the DWF file.

**2** In the open presentation, display the slide where you want to embed the DWF file.

**3** If necessary, display the **Developer** tab and verify ActiveX settings in PowerPoint 2007.

   **a** Click the **Microsoft® Office Button** and select **PowerPoint Options**.

     The **PowerPoint Options** dialog box opens.

   **b** On the **Popular** tab, select **Show Developer Tab in the Ribbon**.

    **c** Click **Trust Center** and, under **Microsoft Office PowerPoint Trust Center**, click **Trust Center Settings**.

       The **Trust Center** dialog box opens.

    **d** Click **ActiveX Settings** and, if necessary, select **Prompt Me Before Enabling All Controls with Minimal Restrictions** and click **OK**.

    **e** Click **OK** to close the **PowerPoint Options** dialog box.

**4** On the **Developer** tab, in the **Controls** group, click the **More Controls** button.

The **More Controls** dialog box opens.

**5** Select **Autodesk DWF Viewer Control** and click **OK**.

The mouse pointer turns to a crosshair.

**6** In the slide, click and drag a rectangle to insert and size the Autodesk DWF Viewer Control object.

**7** Right-click the object and select **Autodesk DWF Viewer Control Object ➤ Properties**.

The **Autodesk DWF Viewer Control Properties** dialog box opens.

**8** On the **Source Path** tab, for the desired DWF file, type the appropriate path and file name.

**9** Optional: Select the **Do You Want to Embed a Copy of This File in the Parent Document** option.

**10** Click **OK**.

**PowerPoint 2010: To interact with an embedded DWF file in Slide Show view**

**1** In PowerPoint 2010, open the PowerPoint presentation to receive the DWF file.

**2** In the open presentation, display the slide where you want to embed the DWF file.

**3** If necessary, display the **Developer** tab and verify ActiveX settings in PowerPoint 2010.

    **a** Click the **File** tab and select **Options**.

       The **PowerPoint Options** dialog box opens.

    **b** On the left, click **Customize Ribbon** .

    **c** In the **Main Tabs** list, select **Developer**.

**d** On the left, click **Trust Center** and, under **Microsoft Office PowerPoint Trust Center**, click **Trust Center Settings**.

The **Trust Center** dialog box opens.

**e** Click **ActiveX Settings** and, if necessary, select **Prompt Me Before Enabling All Controls with Minimal Restrictions** and click **OK**.

**f** Click **OK** to close the **PowerPoint Options** dialog box.

**4** On the **Developer** tab, in the **Controls** group, click the **More Controls** button.

The **More Controls** dialog box opens.

**5** Select **Autodesk DWF Viewer Control** and click **OK**.

The mouse pointer turns to a crosshair.

**6** In the slide, click and drag a rectangle to insert and size the Autodesk DWF Viewer Control object.

**7** Right-click the object and choose **Autodesk DWF Viewer Control Object ➤ Properties**.

The **Autodesk DWF Viewer Control Properties** dialog box opens.

**8** On the **Source Path** tab, for the desired DWF file, type the appropriate path and file name.

**9** Optional: Select the **Do You Want to Embed a Copy of This File in the Parent Document** option.

**10** Click **OK**.

To interact with the embedded DWF file in Slide Show mode of PowerPoint, display the presentation in Slide Show mode and navigate to the slide that contains the embedded DWF file. Then click the embedded DWF file and manipulate it as needed. Then to exit the embedded DWF file, click outside the DWF file area and continue viewing the presentation.

# Changing Design Review Options

# 4

## About the Options Dialog Box

To access settings that control how Design Review behaves and how a DWF file and its contents are displayed on the canvas, click the application button ➤ **Options**. The **Options** dialog box has several tabs.

### General Tab (Options Dialog Box)

The **General** tab enables you to set common Design Review options.

**View Settings**

**Canvas Color**  For each sheet, the color of the canvas is set according to how it was published, most commonly a gray canvas. Canvas color is used only for on-screen viewing. The canvas color does not print.

**NOTE** For sheets created by the DWF publisher as a *layer (page 283)* ready for printing, you may see a drop shadow upon opening the sheet regardless of whether or not the canvas is viewable. The canvas and paper color settings, however, will work.

**Color Scheme**  Apply a **Dark** or **Light** color scheme to Design Review application window elements.

**Automatic Palette Launching**

Control how the palettes open based on selected content.

**Launch Palette Automatically When Related Content Is Selected**  Check the desired palette name to show the palette if hidden when related content is selected.

## Markup Settings

**Use Markup Status Color Highlighting** If statuses have been added to either a callout or custom symbol, those markups show the color unique to the set status. By default, markup status color highlighting is shown, but you may want to hide it for on-screen display or printing purposes.

## File Settings

**DWF Format** Select the default file format, DWFx or DWF, used by Design Review when saving or importing files.

## Zoom Tool

Control how the **Zoom** tool works using the mouse.

**To Zoom in with Mouse** Push Mouse Up to **zoom** in.

Pull Mouse Down to **zoom** in.

**To Zoom in with the Mouse Wheel** Roll Wheel Up to **zoom** in.

Roll Wheel Down to **zoom** in.

## File Notifications

**Warn When Upgrading Earlier Versions of DWF** When saving an older DWF file that contains a single sheet with 2D content, Design Review automatically attempts to upgrade it from the pre-6.0 DWF file format to the latest version. By default, before upgrading the file format, a dialog box opens to warn you that the upgrade is about to take place.

TIP To retain the original file in the older DWF file format, click **No** and save the updated DWF file to a new location or with a different name.

**Warn When Viewing a Document with Restrictions** When opening a DWF file with disabled content, a dialog box identifies the affected sheets and the type of restriction.

**Notify after adding a new digital signature or opening a signed file** After signing a DWFx file or after opening a digitally signed DWFx file, a dialog box shows the signature details.

**Notify When Imported Files Contain Unsupported Features** When opening a DWF file with unsupported features, you are notified so you can decide how to proceed.

## Auto Recovery

**Enable Auto Recovery** Controls the **Auto Recovery** feature and the related options. By default, **Auto Recovery** is enabled. Disabling **Auto Recovery** disables the related options.

**Minutes Between Saves** Specify the amount of time for automatically saving the open file to the backup files storage location.

**NOTE** For larger files, saving files more frequently may affect system performance.

**Save Files In** Specify the path for the backup files storage location.

**See also:**

# Sheet Tab (Options Dialog Box)

The **Sheet** tab enables you to set Design Review options unique to 2D content.
**Paper Settings**
**Paper Color** When a 2D sheet is displayed on the canvas, the color of the paper is set according to how it was published, most commonly using a white paper. Paper color is used only for on-screen viewing. The paper color does not print.

**Override Published Paper Colors** Enables you to set Design Review to disregard published paper colors for 2D sheets.

**Sheet Size Settings**
**Select a Paper Size Based on the User Locale** Selected by default, this option uses the common paper size based on the computer Regional Options setting.

**Select from the Following List** Specify paper size settings from the drop-down list: **Metric**, **Imperial**, or **All Paper Sizes**. This setting takes precedence over of computer regional settings.

**Object Highlighting**
**Enable Dynamic Highlighting** Use to disable or enable dynamic highlighting for 2D sheets.

**Dynamic Highlight Color** Set the color of a 2D object when the mouse pointer is moved over it.

**Selection Color** Set the color of published 2D objects when selected. Markup objects are not affected by this setting.

### Hyperlink Settings

**Sheet Hyperlink Color**  Set the color of hyperlinks on 2D sheets.

**Single Click to Follow Sheet Hyperlinks**  Set the behavior of hyperlinks on 2D sheets. By default, Design Review requires customers to Ctrl-click a hyperlink to display the linked content.

**Show Sheet Hyperlink Tooltips**  Tooltips display the destination of a hyperlink connection and instructions for following it. This option controls whether or not hyperlink tooltips are shown.

**See also:**

# Model Tab (Options Dialog Box)

The **Model** tab enables you to set Design Review options unique to 3D content.

### View Settings

**Driver**  Control which graphics driver Design Review uses. Select from **OpenGL**, **Software (OpenGL)**, or **Direct3D**. **OpenGL** and **DirectX** are hardware-dependent. **Software (OpenGL)** may be slower than the hardware-dependent options.

**Fidelity**  Control whether or not to increase display performance or content fidelity.

**Smooth Camera Transitions**      When switching from one view to another, or while viewing animations, Design Review can smooth the transition between views or between animation sequences.

**TIP**  If you change views several times, you click the **Previous View** button to step back through your views. With **Smooth Camera Transitions** enabled, you can create a movie walk through.

### Color Settings

**Model Edge Color**  Control edge colors for 3D objects. By default, edges display in the color in which they were published. The selected **Model Edge Color** setting is shown only when the **Edges Only** or **Shaded with Edges** is chosen from the Shading/Edges drop-down list on the **View** panel.

**As Published**  Selected by default, this option is disabled if a custom model edge color is defined.

**Gradient Background Color** Control the canvas for 3D content. The canvas has a gradient effect: a smooth blending of colors from one to another. By default, the colors are dark to light gray.

**Use Gradient Background** Control whether or not the gradient background is shown for 3D content.

### Object Highlighting

**Enable Dynamic Highlighting** Use to disable or enable dynamic highlighting for 3D sheets.

**Dynamic Highlight Color** Set the color of a 3D object when the mouse pointer is moved over it.

**Selection Color** Set the color of published 3D objects when selected. Markup objects are not affected by this setting.

### Shadow Settings

**Show Shadows** Control whether or not shadows are shown.

**TIP** Shadows can also be enabled or disabled by clicking **Home** tab ➤ **View** panel (expanded) ➤ **Drop Shadows** button. 

**Offset from Model (%)** Control the apparent distance between the shadows and the object casting the shadows by entering a value between zero and 100.

**Light Direction** Control the apparent direction from which shadows are cast.

**See also:**

View Shadows for 3D Objects (page 94)

Change Default Color Options (page 254)

Restore Default Options (page 257)

# GPS Tab (Options Dialog Box)

The **GPS** tab enables you to configure and connect to the installed GPS device to work with Design Review. To configure GPS options, open a DWF file containing a georeferenced map and display the map on the canvas.

### Connection

**Automatically Scan All Ports for My GPS Device** The computer detects the port used by the first GPS device. If multiple GPS devices are installed, use the manual option.

**Manually Specify Connection Port for My GPS Device**   Select the port where the GPS device is installed from the Port drop-down list.

**Select a Port**   Drop-down list of ports, ranging from **COM1** to **COM10**. This option is only available when **Manually Specify Connection Port for My GPS Device** is enabled.

**Set the GPS Refresh Interval**   Determine how often the GPS device polls the satellite for the current location. If the GPS device cannot update the map's coordinates due to signal failure, the **My Location** icon displays a question mark, and map repositioning is suspended until a satellite signal is reacquired. Refresh interval options include **1**, **5**, **15**, and **30 seconds**, **1**, **5**, **15**, **30 minutes**, and **1 hour**.

**Status**
**Status**   Displays the current GPS device connection status. At first connection, the **GPS Device Connection Status** message box opens and displays a log of all status messages. This message box can be left open for continuous monitoring or closed. The status is always displayed on the **GPS** tab in the **Options** dialog box.

**Use This Connection at Startup**   Checked by default, this option retains the current GPS device configuration for Design Review to use the next time a georeferenced map is displayed on the canvas. If no configuration is specified, this option is disabled.

**Connect**   Uses the current GPS device configuration to enable the GPS device. Button changes to **Disconnect** once the GPS device is connected.

**See also:**

# SteeringWheels Tab (Options Dialog Box)

The **SteeringWheels** tab enables you to set the following options to fine tune the behavior of various SteeringWheel tools based on your preferences.
**Big Wheels**
**Wheel Size**   Control the size of the Big Wheels.

**Wheel Opacity**   Control the opacity of the Big Wheels.

**Display**

**Display Heads-Up Messages** Control whether or not SteeringWheel messages are shown.

**Display Tool Tips** Control whether or not SteeringWheel tooltips are shown.

**Display the Pinned Wheel on Startup** Control whether or not the SteeringWheel is shown when Design Review starts. This option only applies to the 3D wheels.

**Look Tool**

**Invert Vertical Axis** Inverts the direction the camera looks when you move the mouse.

**Zoom Tool**

**Enable Single Click Incremental Zoom-In** Enables **Zoom** tool for adjusting the zoom location.

**Mini Wheel**

**Wheel Size** Control the size of the Mini Wheels.

**Wheel Opacity** Control the opacity of the Mini Wheels.

**Walk Tool**

**Constrain Walk Angle to Ground Plane** Checked by default. Uncheck this option to remove the ground plane constraint.

**Walking Speed** Control the speed of the **Walk** tool.

**Orbit Tool**

**Maintain the Up Direction** Checked by default. This option forces the **Orbit** tool to honor the model's published up direction.

**Enable Selection Sensitivity** Checked by default. The view rotates around the selected part or parts.

**See also:**

# ViewCube Tab (Options Dialog Box)

The **ViewCube** tab enables you to set the following options to fine tune the behavior of the **ViewCube** based on your preferences.

**Show the ViewCube**  Checked by default. Control whether or not the **ViewCube** is shown.

**Keep Scene Upright**  Checked by default. Uncheck this option to prevent the model from switching to a top-up view, set by the designer, when a **ViewCube** view is selected.

### When Dragging on the ViewCube

**Snap to Closest View**  Checked by default. Controls whether or not the view snaps to the closest available fixed view when you release the mouse button after dragging the **ViewCube**.

### When Clicking on the ViewCube

**Fit-to-View on View Change**  Checked by default. Zooms the view of the model or selected object when you click the **ViewCube**.

When unchecked, clicking or dragging the **ViewCube** rotates around the current center of rotation and does not zoom in or out.

**Orient ViewCube to Current UCS**  Checked by default. The **ViewCube** is reoriented to the currently selected **UCS**, when one is active. When unchecked, or when no **UCS** is active, the **ViewCube** is oriented to the **WCS**.

When you create a **UCS** and make it active, a **Coordinate System** drop-down list is displayed below the **ViewCube**. From the list, you can quickly select a different coordinate system or access the **Manage Coordinate Systems** dialog box.

### Display

**On-Screen Position**  Position the **ViewCube** in any corner of the Canvas. By default it is displayed in the **Top Right** corner.

**NOTE**  When you change the position of the **ViewCube**, the position of the **Roll Arrows** and **Home** button are also changed relative to the **ViewCube**.

**Size**  Set the display size of the **ViewCube** on the Canvas. The default setting is **Normal**.

**Inactive Opacity**  Set the **ViewCube** visibility when the mouse pointer is distant from the **ViewCube**. Move the mouse pointer near the **ViewCube** to make it fully opaque (visible). The default inactive opacity is **50%**.

**See also:**

Use the ViewCube (page 72)

About Coordinate Systems (page 201)

Restore Default Options (page 257)

# DWG Viewing Tab (Options Dialog Box)

If Autodesk® AutoCAD® 2011 or later is installed, the **DWG Viewing** tab is displayed in Design Review, enabling you to set the conversion options for opening DWG files. The **DWG Viewing** tab options *are not available* in Design Review if DWG TrueView is installed.

**Drawing's Paper Size When Printed**  List of available paper sizes for the open DWG file. The default setting is the size specified in the DWG file. If no setting was specified then the default is 8.5 inches x 11 inches.

**Fit Drawing to This Size**  When selected, the drawing is scaled to fit the paper. When unselected, Design Review uses the drawing's scale (or the system default, if no scale was specified).

**Drawing's Orientation on the Page**  Select the drawing orientation of the generated DWF file, **As Published**, **Portrait** or **Landscape**. **As Published** accounts for design files that may contain both portrait and landscape drawings.

**Resolution (Dots Per Inch)**  Higher resolution (larger dpi values) results in greater detail and larger DWF file size. Lower resolution (smaller dpi values) results in faster performance and smaller DWF file size.

**Model Type: 2D or 3D**  Select the method for determining DWG file content. **Best Guess**: Design Review programmatically determines whether or not the DWG file contains 2D or 3D information. If the model space of the DWG file is just a 2D drawing, Design Review imports the 3D model as a 2D sheet. If the model space in the DWG file is a real 3D model, Design Review imports the file as a 3D model. **2D**: Forces DWG file conversion to a 2D sheet. **3D**: Forces DWG file conversion to a 3D model.

**Expose DWG Layers**  When selected, DWG layer information is included in the DWF file.

**WARNING** For password-protected DWG files, layer information is not included.

# PDF Conversion Tab (Options Dialog Box)

The **PDF Conversion** tab enables you to set the conversion options when opening a PDF file in Design Review.

**Resolution (Dots Per Inch)**  Higher resolution (larger dpi values) results in greater detail and larger DWF file size. Lower resolution (smaller dpi values) results in faster performance and smaller DWF file size.

**Convert PDF Files to Black & White DWF Files When Saving**  Saves a PDF file in black and white potentially reducing the resulting DWF file size.

**See also:**

About Saving an Open PDF as a DWF File (page 212)

# Change Default Color Options

Design Review enables you to set the default colors of many things in the program.

| Location | Color-Related Commands |
|---|---|
| **General** Tab (**Options** dialog box) | **Canvas Color** |
| **Sheet** Tab (**Options** dialog box) | **Paper Color**, **Dynamic Highlight Color**, **Selection Color**, and **Sheet Hyperlink Color** |
| **Model** Tab (**Options** dialog box) | **Model Edge Color**, **Gradient Background Color**, **Dynamic Highlight Color**, and **Selection Color** |
| **Compare Options** dialog box | **Additions** and **Deletions** |

The way to change the colors is similar in each case.

**To apply a pre-defined color**

1  If necessary, display the **Options** dialog box and tab of the desired color-related command.
2  Click the command color button. The **Color** dialog box opens.
3  Under **Basic Colors**, click the swatch of the desired color.
4  To confirm the color change, click **OK**.
5  To apply the new pre-defined color, click **OK**.

**To create a custom color**

1   If necessary, display the **Options** dialog box and tab of the desired color-related command.

2   Click the command color button. The **Color** dialog box opens.

3   Under **Custom Colors**, click **Define Custom Colors**. The **Color** dialog box expands.

    NOTE  You can define a custom color by entering its specific **Hue**, **Saturation**, and **Luminescence** values or **Red**, **Green**, or **Blue** values in the **Color** dialog box.

4   From the existing color swatches, select the standard color that is closest to the custom color you would like to create.

5   To get the exact color, drag the color selection icon  and then the saturation selection triangle.  The custom color is shown in the **Color** box.

6   When satisfied with the custom color, click **Add to Custom Colors**. The custom color remains available in the **Color** dialog box for future use.

7   To confirm the color change, click **OK**.

8   To apply the new custom color, click **OK**.

# Recover a DWF File

Power outages, system crashes, and other issues may abruptly close files before you are able to save your changes. Enabled by default, **Auto Recovery** gives you an opportunity to recover that work.

TIP  You can control **Auto Recovery** settings, in the **Options** dialog box on the **General** tab.

**To recover a DWF file**

1   Restart Design Review.

2   If a **Customer Involvement Program** dialog box opens prompting you to describe the unexpected close, provide details and click **OK**.

**3** A message box opens indicating that **Auto Recovery** is enabled and an open file was saved. Click **OK**.

**4** Reopen the file that you were working on previously from its original location.

A dialog box opens indicating that a newer version of the file was saved automatically.

**5** Click the desired option.

- Click **Use Newer Version** to open the automatically saved version from the backup files storage location.

- Click **Use Older Version** to open the last version of the file you saved from the original storage location.

- Click **Cancel** to prevent either version of the file from being opened. The next time you try to open that file you will be prompted again.

**See also:**

# Share Design Review Options

Sharing Design Review's application options enables you to export all settings available in the **Options** dialog box and application menu as an XML options file. Once exported, you can place the options file in a central location or distribute it by email. Team members and clients can then import the options file ensuring that they have application settings identical to your own.

**To export current options**

**1** Click the application button ➤ **Options**.

The **Options** dialog box opens.

**2** On any tab in the **Options** dialog box, click **Export Current**. If prompted to save option changes, click **OK**.

The **Export Current Options** dialog box opens.

**3** Optional: Navigate to the location where you want to store a copy of the current options file.

**4** In the **File Name** text box, type the name of the options file.

**5** Click **Save**.

**6** To close the **Options** dialog box, click **OK**.

**To import saved options**

1   Click the application button ➤ **Options**.

    The **Options** dialog box opens.

2   On any tab in the **Options** dialog box, click **Import Saved**.

    The **Import Saved Options** dialog box opens.

3   Navigate to where the saved options file you want to import is stored.

4   Select the saved options file and click **Open**.

5   To close the **Options** dialog box, click **OK**.

**See also:**

Use Workspaces  (page 38)

Manage Symbol Catalogs  (page 176)

# Restore Default Options

Restoring Design Review's default options resets all customizations, including re-displaying dialog boxes you have chosen not to show again.

---

**NOTE** Restoring the default options from the **Options** dialog box does not change the default **Compare** markup colors for **additions** and **deletions**.

---

**To restore the original settings**

1   Click the application button ➤ **Options**.

    The **Options** dialog box opens.

2   On any tab in the **Options** dialog box, click **Restore Defaults**.

    A dialog box opens, warning that any saved settings will be lost.

3   Click **Yes** to continue.

4   To close the **Options** dialog box, click **OK**.

# Programming Options for Design Review

Design Review enables you to extend its functionality with an *API (page 281)* . You can also customize your own applications to allow them to read and write DWF files with the Toolkit.

**Use APIs to Extend Design Review Functionality**

The application programming interface (API) was originally created for the previous viewing program, Autodesk DWF Viewer, so it emphasizes viewing, plotting, and user interface customization capabilities.

The API enables you to navigate to a specific page or view, set layer visibility, and control the user interface.

You must understand programming and *ActiveX (page 281)* technology in order to use the API. You can program in these languages:

- Visual Basic® 6.0

- Visual Basic® .NET

- Visual C#®

- Visual C++®

- JavaScript

This API can be applied whether or not Design Review is standalone or embedded in other software. You can read more about the API and get sample code at the Developer Center (*http://www.autodesk.com/dwf-developers*).

**DWF Toolkit**

Give your own applications the ability to read and write DWF files using the DWF Toolkit (*http://www.autodesk.com/dwftoolkit*).

**See also:**

Learning Resources (page 276)

Design Review is updated regularly. When an update is available, you are prompted automatically to update the product. You have the option to be reminded later.

**To check for updates manually**

- Click **Home** tab ➤ **Assistance** panel ➤ **Help** drop-down ➤ **Check for Updates**.

  The **Autodesk Design Review Information** dialog box opens.

  A message either indicates you already have the latest version installed, or that new Autodesk Design Review product information is available.

**To see which version you have installed**

■ Click **Home** tab ➤ **Assistance** panel ➤ **Help** drop-down ➤ **About Autodesk Design Review**.

**Disable Prompts for Automatic Updates**

Based on your network policies, you may want to disable the automatic update prompt shown when starting Design Review. You can still check for updates manually from the **Help** drop-down.

You only have the opportunity to disable update prompts when either a new version or new information is available from Autodesk. If no new content is available when you **Check for Updates**, you will receive a message that indicates that you have the latest version and no updates are available. The **Don't Show This Again** option will not be displayed.

**To disable prompts for automatic updates**

1 Click **Home** tab ➤ **Assistance** panel ➤ **Help** drop-down ➤ **Check for Updates**.

The **Autodesk Design Review Information** dialog box opens.

2 If a new version or new information is available from Autodesk, click **Don't Show This Again**.

# Quick Reference Guide

# 5

# Alternative Methods for Performing Commands

Design Review often provides several ways to perform the same command:

■ Application menu button, ribbon tabs, palettes, and toolbars

■ Keyboard shortcuts

■ Right-click menus

The application menu button, ribbon tabs, palettes, and toolbars are used most often to invoke a command. You can also use a keyboard shortcut (a key or combination of keys you can press to perform a command quickly). When available, keyboard shortcuts are shown to the right of their respective tool names in menus and tooltips.

**NOTE** Keyboard shortcuts are different than keytips. Keyboard shortcuts provide a direct way to perform a command immediately.

Another alternative to invoke a command is to use the right-click menu. In many locations within Design Review, you can right-click to display commands relevant to the position of the mouse pointer. This right-click ability is especially important when viewing a DWF file in embedded mode, as menus and toolbars can be hidden.

**Application Menu**

| Icon | Command | Keyboard Shortcut |
|---|---|---|
|  | **New** | Ctrl+N |
|  | **Open/Open File** | Ctrl+O |
|  | **Save** | Ctrl+S |
|  | **Print** | Ctrl+P |
|  | **Send Email** | Ctrl+E |
|  | **Close** | Ctrl+W |
|  | **Exit Design Review** | Alt+F4 |

**Quick Access Toolbar**

| Icon | Command | Keyboard Shortcut |
| --- | --- | --- |
| | **Open** | Ctrl+O |
| | **Save** | Ctrl+S |
| | **Print** | Ctrl+P |
| | **Undo** | Ctrl+Z |
| | **Redo** | Ctrl+Y |
| | **Send Email** | Ctrl+E |

**Ribbon: Home Tab**

| Icon | Command | Keyboard Shortcut |
|---|---|---|
| | **Print** | Ctrl+P |
| | **Undo** | Ctrl+Z |
| | **Redo** | Ctrl+Y |
| | **Full Screen** | N |
| | **Copy Current View** | Ctrl+Shift+C |
| | **Show Markups** | Ctrl+Shift+M |
| | **Previous View** | Ctrl+Shift+P |
| | **Next View** | Ctrl+Shift+N |
| | **Starting View** | Ctrl+Home |
| | **Drop Shadows** | Ctrl+Shift+S |
| | **Coordinate Systems** | Ctrl+U |

| Icon | Command | Keyboard Shortcut |
|------|---------|-------------------|
|  | **Show ViewCube** | Ctrl+Shift+O |
|  | **Show Hyperlinks** | Ctrl+Shift+H |
|  | **Show Canvas Back-ground** | Ctrl+Shift+B |
|  | **Snap to Geometry** | Ctrl+Shift+G |
|  | **Find Palette** | Ctrl+F |
|  | **Help** | F1 |

**Ribbon: Markup & Measure Tab**

| Icon | Command | Keyboard Shortcut |
|------|---------|-------------------|
| | **Cut** | Ctrl+X |
| | **Copy** | Ctrl+C |
| | **Paste** | Ctrl+V |
| | **Rectangle Callout** | Ctrl+1 |
| | **Rectangle Callout with Rectangle Cloud** | Ctrl+2 |
| | **Rectangle Callout with Polycloud** | Ctrl+3 |
| | **Circle Callout** | Ctrl+4 |
| | **Circle Callout with Rectangle Cloud** | Ctrl+5 |
| | **Circle Callout with Polycloud** | Ctrl+6 |
| | **Triangle Callout** | Ctrl+7 |
| | **Triangle Callout with Rectangle Cloud** | Ctrl+8 |

| Icon | Command | Keyboard Shortcut |
|---|---|---|
| | **Triangle Callout with Polycloud** | Ctrl+9 |
| | (Enable last used callout tool) | M or Spacebar |
| | **Line** | Shift+1 |
| | **Rectangle** | Shift+2 |
| | **Freehand Highlighter** | Shift+3 |
| | **Rectangle Cloud** | Shift+4 |
| | **Polyline** (**Draw** panel) | Shift+5 |
| | **Ellipse** | Shift+6 |
| | **Rectangle Highlighter** | Shift+7 |
| | **Polycloud** | Shift+8 |
| | **Freehand** | S |
| | **Text Box** | T |

| Icon | Command | Keyboard Shortcut |
|------|---------|-------------------|
| | **Length** | G |
| | **Area** | U |
| | **Relative Distance** | I |
| | **Polyline** (**Measure** panel) | W |
| | **Point Location** | L |
| | **Length/Radius** | J |
| | **Angle** | K |
| | **Stamps** | O |
| | **Symbols** | Z |
| | (Enable last used markup tool from the **Callouts**, **Draw**, **Measure**, and **Stamps & Symbols** panels) | Spacebar |

**Ribbon: Tools Tab**

| Icon | Command | Keyboard Shortcut |
|------|---------|-------------------|
|  | **Rotate Sheet Right** | Ctrl+Shift+1 |
|  | **Rotate Sheet Left** | Ctrl+Shift+2 |
|  | **Move and Rotate** | Ctrl+Shift+R |
|  | **Section Face** | Ctrl+Shift+E |
|  | **XY Section** | Ctrl+Shift+X |
|  | **XZ Section** | Ctrl+Shift+Z |
|  | **YZ Section** | Ctrl+Shift+Y |
|  | **From Snapshot** | P |

**Ribbon: Animation Tab**

| Icon | Command | Keyboard Shortcut |
|------|---------|-------------------|
| | **Play** | Z |
| | **Pause** | Z |
| | **Reverse** | W |
| | **Next Interval** | Ctrl+Shift+Right Arrow |
| | **Previous Interval** | Ctrl+Shift+Left Arrow |
| | **Next Sequence** | Ctrl+Right Arrow |
| | **Previous Sequence** | Ctrl+Left Arrow |
| | **Speed** | Ctrl+Shift+Plus/Minus |
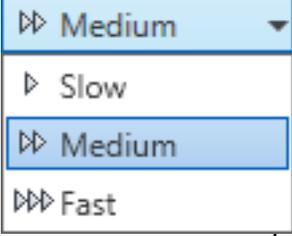
▷▷ Medium ▼

▷ Slow
▷▷ Medium
▷▷▷ Fast

**Canvas Toolbar**

| Icon | Command | Keyboard Shortcut |
|------|---------|-------------------|
| | **Select** | A |
| `30` | ~~ew~~ | V to increase/Shift+V to de-crease |
| | **Home** | Home |
| | **Pan** | H |
| | **Zoom** | Q (Dynamic Zoom) or Ctrl+Plus/Minus keys (Con-trolled Zoom) |
| | **Fit to Window** | F |
| | **Zoom Rectangle** | R |
| | **Orbit** | B |
| | **Turntable** | E |
| | **2D Navigation Wheel** | Ctrl+Shift+W |
| | **View Object Wheel** | Ctrl+Shift+I |

| Icon | Command | Keyboard Shortcut |
| --- | --- | --- |
| | **Tour Building Wheel** | Ctrl+Shift+J |
| | **Full Navigation Wheel** | Ctrl+Shift+K |
| | **Mini View Object Wheel** | Ctrl+Shift+. |
| | **Mini Tour Building Wheel** | Ctrl+Shift+, |
| | **Mini Full Navigation Wheel** | Ctrl+Shift+/ |
| | **Previous Page** | PgUp |
| | **Next Page** | PgDn |
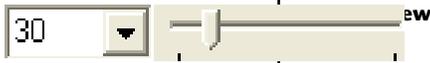
**Map Toolbar**

| Icon | Command | Keyboard Shortcut |
|---|---|---|
|  | **Turn on GPS Mode** | Ctrl+J |
|  | **Center to Coordinates** | Ctrl+Shift+J |
| | **Copy Coordinates** from Map Toolbar | Ctrl+Shift+D |
| | **Copy Coordinates** from the Canvas* | Ctrl+K |
| | **Paste Coordinates** | Ctrl+L |

*Available when right-clicking the canvas.

# Use the Arrow Keys to Move and Rotate

When you pull apart or cross section 3D models, you can use the arrow keys to move one or more selected objects or a section plane.

**Use Arrow Keys to Move and Rotate a 3D Model**

| Plane | Axis | Arrow Key and Direction |
|-------|------|-------------------------|
| XY | X | Up Arrow. Away from the origin.<br>Down Arrow. Towards the origin. |
|  | Y | Left Arrow. Away from the origin.<br>Right Arrow. Towards the origin. |
| XZ | X | Up Arrow. Away from the origin.<br>Down Arrow. Towards the origin. |
|  | Z | Left Arrow. Away from the origin.<br>Right Arrow. Towards the origin. |
| YZ | Y | Up Arrow. Away from the origin.<br>Down Arrow. Towards the origin. |
|  | Z | Left Arrow. Away from the origin.<br>Right Arrow. Towards the origin. |

**To move an object or section plane along an axis**

**1**  Click the X, Y, or Z axis near the origin.

**2**  Use the up or down arrow keys to move the object.
- Up Arrow. Away from the origin.
- Down Arrow. Towards the origin.

**To rotate an object or section plane**

**1**  Click the X, Y, or Z axis at the end away from the origin.

**2**  Use the up or down arrow keys to rotate objects or section planes in one-degree increments. Press the Down Arrow to rotate clockwise and the Up Arrow to rotate counterclockwise.
- Up Arrow. Rotate counterclockwise.
- Down Arrow. Rotate clockwise.

**TIP** Press and hold Shift while using the arrow keys to rotate, the object rotates in 45° increments.

# Learning Resources

For more information about Design Review, the DWF file format, and DWF-related products, explore these learning resources.

**Design Review Support**

- Design Review Product Center: *http://www.autodesk.com/designreview*
- Design Review Online Help: *http://www.autodesk.com/designreview-help*
- Design Review videos on YouTube™: *http://www.autodesk.com/designreview-youtube*
- Design Review Learning Path: *http://www.autodesk.com/designreview-learningpath*
- Design Review online demonstration: *http://www.autodesk.com/designreview-tutorial*
- Design Review discussion group: *http://www.autodesk.com/discussiongroup-designreview*
- Design Review Support Knowledge Base: *http://www.autodesk.com/designreview-support*
- Design Review API documentation: *http://www.autodesk.com/dwf-developers*
- Design Review Updates & Service Packs: *http://www.autodesk.com/designreview-updates*
- Design Review Plug-ins and Add-ons: *http://www.autodesk.com/dwf-plugins*
- Autodesk® Freewheel® plug-in: *http://labs.autodesk.com/utilities/ShareNow/*

**Other DWF-Related Resources**

- Autodesk DWF Toolkit: *http://www.autodesk.com/dwftoolkit*
- Beyond the Paper blog: *http://www.autodesk.com/designreview-blog*
- DWF Developer Center: *http://www.autodesk.com/dwf-developers*
- DWF discussion group: *http://www.autodesk.com/discussiongroup-dwf*

**Other DWF-Related Autodesk Products**

- Autodesk® Buzzsaw®: *http://www.autodesk.com/buzzsaw*
- Autodesk® DWF™ Writer: *http://www.autodesk.com/dwfwriter*

- Autodesk® Navisworks®: *http://www.autodesk.com/navisworks*
- Autodesk® Seek: *http://seek.autodesk.com*
- DWG TrueView™: *http://www.autodesk.com/dwgtrueview*

**Non-Autodesk Websites**

- 3Dconnexion: *http://www.3dconnexion.com*
- Autodesk User Group International: *http://www.augi.com*
- HP Instant Printing® (HPIP): *http://www.hp.com/go/hp-instant-printing/*
- Microsoft XPS Viewer: *http://www.microsoft.com/whdc/xps/viewxps.mspx*

# Uninstall Design Review

**6**

**To uninstall Design Review**

**1** Click **Start** ➤ **Control Panel**.

**2** Click **Add or Remove Programs**.

   **NOTE** For Windows Vista and Windows 7, click **Uninstall a Program**.

**3** From the list of programs, select Autodesk Design Review 2012.

**4** Click **Change/Remove**.
   The Add or Remove Programs message box opens.

   **NOTE** For Windows Vista and Windows 7, click **Uninstall/Change**.

**5** Follow the prompts to finish uninstalling the program.

---

**NOTE** After uninstalling Design Review, restart your computer.

---

Design Review does not uninstall customizations stored in your user profile in case you want to reinstall the product. To delete the customizations from Windows XP, delete the `\Documents and Settings\[user name]\Local Settings\Application Data\Autodesk\Autodesk Design Review` folder. From Windows Vista and Windows 7, delete the `Users\[user name]\AppData\Local\Autodesk\Autodesk Design Review` folder.

# Glossary

<span style="float: right; font-size: 4em; font-weight: bold;">7</span>

**ActiveX**  A Microsoft® technology that allows programs to run within other software. The software that holds the program, such as Internet Explorer® or Microsoft® Word, is called the container. The program that runs inside it, such as Design Review, is called the control.

**API**  Application Programming Interface. A programming language used to enable applications to communicate with each other.

**application button**  The button that is displayed in the top-left corner of the application. If you click the application button, the application menu is displayed.

**application menu**  The menu that is displayed when you click the application button. The application menu contains common tools for creating, saving, and publishing a file.

**assembly**  An object in a 3D model. An assembly can be made up of smaller objects called subassemblies or subobjects.

**block**  A meaningful set of geometric shapes. Also known as an object or assembly.

**BOM**  Bill Of Materials. A hierarchical list, like a parts list. A BOM describes a product in terms of its component parts.

**BPJ**  **Batch Print Job**. A file that stores saved batch print settings for several DWF files.

**CAD**  Computer Aided Design. The process of using a computer program to design drawings and models of physical objects.

**canvas**  The primary viewing and markup area for a sheet or model.

**cap**  A **cap** is the flat surface displayed after using the Cross Section tool. Disabling caps allows you to see parts as if they are hollow.

**command prompt**  In a command-line interface, the command prompt is an indicator that shows the computer is ready to receive a command.

**coordinate system**  A **coordinate system** is a method used to indicate the position of 3D content in dimensional space.

**cross section**  A section made by cutting a model at an angle, usually to display an interior view.

**datum**  A mapped reference point from which GPS measurements can be made. Each datum includes both an ellipsoid, which specifies the size and shape of the earth, and a base point for latitude and longitude. If two maps use different datums, points on the map may not line up.

**digital signature**  A method used to maintain file authenticity and to provide a safe environment for sending and receiving data.

**Direct3D**  A method used to improve rendering 3D graphics.

**dpi**  Dots Per Inch. A method of measuring image or text resolution.

**DWF**

An open, published, and secure file format developed by Autodesk, DWF enables you to combine and publish rich 2D- and 3D-design data and share it with others.

**DWFx**

A version of DWF based on the XML Paper Specification (XPS) from Microsoft. DWFx enables DWF files to be viewed using the free Microsoft XPS Viewer. Generically referred to as DWF.

**DWG**  DWG refers to the file extension (.dwg) of an AutoCAD file.

**DXF**  Drawing EXchange Format. A file format that enables the exchange of drawings between AutoCAD and other programs. DXF is a predecessor of DWF. Also known as "Drawing Interchange Format."

**expanded panel**

An area on the ribbon associated with a ribbon panel. An expanded panel contains additional tools and controls. *See also* ribbon panel *and* ribbon.

**FEA**  Finite Element Analysis. A way to use colors to identify stresses, displacements, heat transfer, fluid dynamics, or electromagnetism in mechanical objects as defined by the DWF file publisher.

**field of view**  The area that can be seen when looking through a device from a specific location, or vantage point. By decreasing or increasing the angle of

view, you can narrow or widen the field of view, thereby controlling how much can be seen through the device.

**FTP**  File Transfer Protocol. A method of moving files (larger than 10 megabytes) from one location to another over the Internet.

**georeferenced map**  A 2D sheet within a DWF file published by Autodesk® Map 3D 2008 or later that contains a global coordinate system and defined latitude and longitude coordinates based on the WGS84 datum.

**GPS**  Global Positioning System. A satellite navigation system that can locate the latitude and longitude of a GPS device on Earth.

**gradient**  A color fill or pattern that uses a smooth transition between darker shades and lighter tints of one or two colors.

**handle**  A small circle that displays when you select a markup object. Each object has several handles. Handles are used to resize the markup. All markups have handles except for freehand shapes.

**History**  A section in the **Markup Properties** palette, **History** shows note and status changes saved in all markups.

**hyperlink**  A way to associate graphical objects with related documents, such as other drawings, bills of materials, or project schedules.

**intranet**  A company-specific network used to share information between co-workers.

**iPart**  A part with variations that have been published and are embedded in a DWF file.

**layer**  Published by the author of a DWF file, a layer is a way to group similar information in a drawing by function and to enforce line type, color, and other standards. Layers are the primary organizational tool used in drawing. Layers are the equivalent of the overlays used in paper-based drafting.

**MAPI**  Messaging Application Programming Interface. The Microsoft® Windows® messaging system that allows various email applications to send and receive email.

**model**  A meaningful collection of 3D objects. Also a generic way to refer to 3D content.

**My Views**  A list of views created and saved in Design Review. **My Views** is shown in the **Views** palette.

**named view**  A view created and named in Autodesk products. Each named view is shown in the **Views** palette.

**NMEA 0183** An electrical and data transmission standard used by GPS devices defined by the National Marine Electronics Association.

**Notes** A section in the **Markup Properties** palette that can be used to add a note to a markup.

**object** Generically, any item on the canvas, **Markups** palette, or **Model** palette. Objects created in Design Review are called markup objects. Objects created in the DWF publishing program are called published objects. An object in a 3D model is sometimes called an assembly or part.

**OpenGL** A method used to improve rendering of 2D and 3D graphics.

**orthographic view** A view of a 3D model in which all lines on each axis are parallel to each other.

**palette** A group of related tools that enable you to find and display sheets, their markups, layers, views, and properties.

**PDF** Portable Document Format. A file format created by Adobe used to transmit and display documents regardless of the software of the sender or receiver. It includes fonts, formatting, and graphics.

**perspective view** In order to give the illusion of depth, a view of a 3D model where parallel lines appear to converge toward a vanishing point.

**point** A unit of measure used to determine text height or line width. One point equals 1/72nd of an inch.

**properties** Attributes of a sheet, markup, or object displayed in the applicable **Properties** palette. These properties may include the author name, time of creation, and, for markups, their Status and Notes.

**push pin** A push pin-shaped button used on the ribbon and in the application menu. On the ribbon, push pins are used to keep a ribbon panel expanded. In the application menu, push pins keep an item in the list of recently opened items.

**raster image** A type of graphic file, such as a BMP file, made up of individual pixels.

**resolution** The degree of sharpness with which an image is displayed. Images are composed of points called pixels. The greater the number of pixels, the better the resolution. Too many pixels can create large files, which may transfer slowly over the Internet and may perform sluggishly when viewed.

**ribbon** The horizontal area of the application window that contains task-based tabs and panels with tools for viewing, marking up, and sharing DWF files.

**ribbon panel**

A set of labeled controls, related to a task, grouped together in a ribbon. Multiple ribbon panels, belonging to one workflow, are grouped together under a ribbon tab.

**ribbon tab**

Highest level of ribbon grouping, based on an action. A ribbon tab contains groups of multiple ribbon panels, each belonging to one workflow. A ribbon panel contains buttons and controls, related to a task.

**snap**  A point on an object that acts like a magnet, allowing you to attach one object to another at a precise point.

**status**  A way to indicate the current condition of a markup or sheet. Markup status is indicated in the **Markup Properties** palette. Each sheet may have custom stamps applied to indicate its status.

**toolbar**  A row of icons that represent related tools. Each icon, when clicked, invokes an action.

**tracking menu**  A cluster of graphical buttons, called wedges, which follows the mouse pointer as you move it around the canvas, tracking it.

**trails**  Lines in a DWF file animation that show the relationship of a component to the assembly. In an animation, trails indicate the distance and the path along which a component was moved to create the view.

**twip**  TWentIeth of a Point. A unit of measure, a twip equals 1/1440th of an inch.

**UCS**  User Coordinate System. A user-defined coordinate system enables you to set up a point of reference for a particular set of point location measurements.

**UNC**  Universal Naming Convention. A standard for identifying servers, printers, and other resources in a network. A UNC path uses double slashes to represent the drive and directories in which the server can be found. The disk and directories are separated with a single slash or backslash, as follows:

Unix: //servername/path

DOS and Windows: \\servername\path

**vector image**  A type of graphic file made up of individual objects, such as lines and shapes. Vector images retain a high quality at any scale.

**viewport**  A window area on a layout sheet that reveals various views of the same drawing.

**WCS**  World Coordinate System. A coordinate system used as the basis for defining all objects and other coordinate systems. In Design Review, Y is up. In AutoCAD and Inventor, Z is up.

**wedge**  A clickable button on a wheel.

**workspace**  A set of various views of a drawing combined onto a sheet, originally for printing. In AutoCAD products, each layout sheet (sometimes referred to as "paper space" or paper mode) has a defined paper size, orientation, and other page settings.

**See also:**

# Index

## H

H grid table  123
Help  4
    Contents  4
    Favorites  4
    Index  4
    Search  4
hide
    3D objects  91
    background  59
    caps  109
    cross section  108
    Cross Sections palette  35
    Find palette  38
    Grid Data palette  37
    Layers palette  36
    List View palette  27
    Markup Properties palette  28
    markups  145
    Markups palette  30
    Model palette  32
    Object Properties palette  29
    section plane  108
    Sheet Properties palette  28
    Text Data palette  37
    Thumbnails palette  25
    Views palette  33
highlighter
    freehand  143, 166, 167
    rectangle  143, 166, 167
Home  57
HP Instant Printing  226
HPIP  226
hyperlink  55
    find  55
    follow  55, 56, 248
    multiple links  55
    viewport  55

## I

image
    copy  236
images  47, 48
    open  47
    raster  62
    resolution  48
    rotate  62
    symbols  172
import
    DGN  136
    DWF as a symbol catalog  173
    JT  136
    symbols  173
import saved options  256
instructions for assembly  121
isolate 3D objects  18, 91

## J

JavaScript  258
join DWF files  137
JT  136

## K

keyboard shortcuts  261
keytips  10

## L

label  28
Large Thumbnails  25
layers  36
Layers palette  36
leader
    add  163
    remove  163
leader line  143
length  189, 191, 195, 198, 208
lighting  92
line  143, 166, 167
    end style  169
    pattern  169
    start style  169
    thickness  154
    weight  154
    width  154
List View  26
load animation  115

300