

1 Introducing Acrobat 3D and the Acrobat 3D Toolkit

In this lesson, you'll do the following:

- Review what's new in Acrobat 3D Version 8 and the Acrobat 3D Toolkit.
- Open an Acrobat 3D file and interact with the 3D model within the file.

This lesson will take about 30 minutes to complete.

If needed, copy the Lesson01 folder onto your hard drive.

Note: Some Windows users may need to unlock the lesson files before using them. For information, see "Copying Classroom in a Book files" on page 4.

Adobe Acrobat 3D allows engineering and technical professionals to publish and share 3D design information without sharing their native design files. With Acrobat 3D, you can create PDF files from supported CAD file formats, retaining all the structure and detail of your 3D model in the universally accepted PDF file format. You can also create PDF files from unsupported formats by capturing them in their native application, or by opening and saving them in the Acrobat 3D Toolkit, a separate application that is included with Acrobat 3D.

Because your PDF files retain the appearance of your original documents, you don't need to worry about losing document quality. Your PDF files can be viewed, manipulated, and interrogated on Windows, Mac OS, or UNIX using the free Adobe Reader software, so anyone (with your permission) can work with your PDF files without having the source applications.

With Acrobat 3D Version 8 you have CAD interoperability. Your clients and suppliers can export geometry for re-use in other computer aided manufacturing (CAM) applications without the need for dedicated CAD translators.

About Acrobat 3D and the Acrobat 3D Toolkit

Acrobat 3D is an extended set of the Adobe Acrobat 8 Professional features that allows you to create 3D PDF files, to add 3D models to PDF documents, and to interact with existing 3D content using the 3D Toolbar and a Model Tree. You can convert 3D content directly from supported 3D CAD files or you can capture content from within your 3D CAD applications.

Acrobat 3D includes an Acrobat 3D Toolkit, designed primarily for technical writers and creative publications professionals, that allows you to add 3D models in U3D format to PDF documents, as well as edit, manage, search, view, and repurpose your 2D, 3D, animation, video, and audio assets. The Acrobat 3D Toolkit is covered in detail in Lesson 9, “Using 3D Models in Technical Publishing.”

What’s new in Acrobat 3D Version 8

Acrobat 3D Version 8 brings you all the new features and the improved user interface of Adobe Acrobat 8 Professional. Additionally Acrobat 3D offers the following features:

- The ability to view product manufacturing information (PMI) in the assembly tree. You can import and view geometric dimensioning and tolerancing specifications in the 3D model as product manufacturing information instead of using a separate 2D drawing. Supported file formats include CATIA V5, I-DEAS, JT, NX, and Pro/ENGINEER.
- The ability to export geometry to standard 3D formats (IGES, STEP, Parasolid, and VRML) for interoperability with computer aided manufacturing (CAM) applications.
- Support for the latest CAD formats. You can convert files created using the latest versions of most CAD file formats without installing the CAD application.
- Precise and highly compressed geometry with topology.
- Faster opening and conversion of CAD files, as well as faster rendering of large assemblies.
- Compact PDFs. You can adjust 3D conversion settings to create highly compressed, universally accessible PDF files that are a fraction of the size of the original CAD file or assembly.
- Support for DWG/DWF files. You can convert AutoCAD DWF and DWG format files without installing the AutoCAD application.

A quick look at 3D content in PDF files

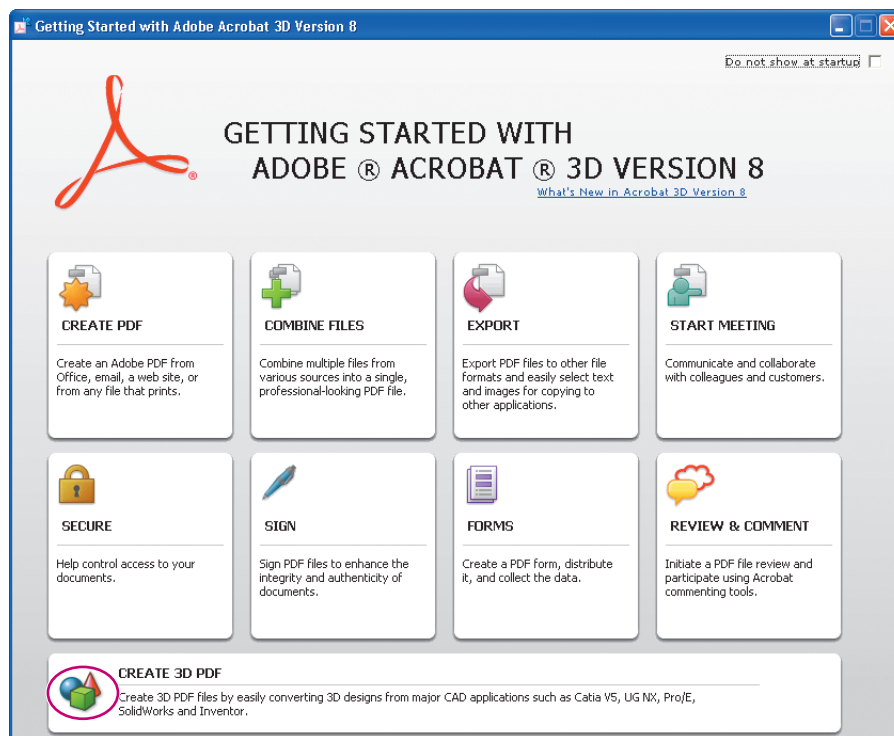
Now you'll open a 3D PDF file and see how easily you can work with the rich 3D content without the need for complex CAD, CAM, or CAE applications.

Launching Acrobat 3D

Each time you open Acrobat 3D, the *Getting Started with Adobe Acrobat 3D Version 8* window opens automatically. You can use this new Getting Started window to initiate common tasks or access a Help topic.

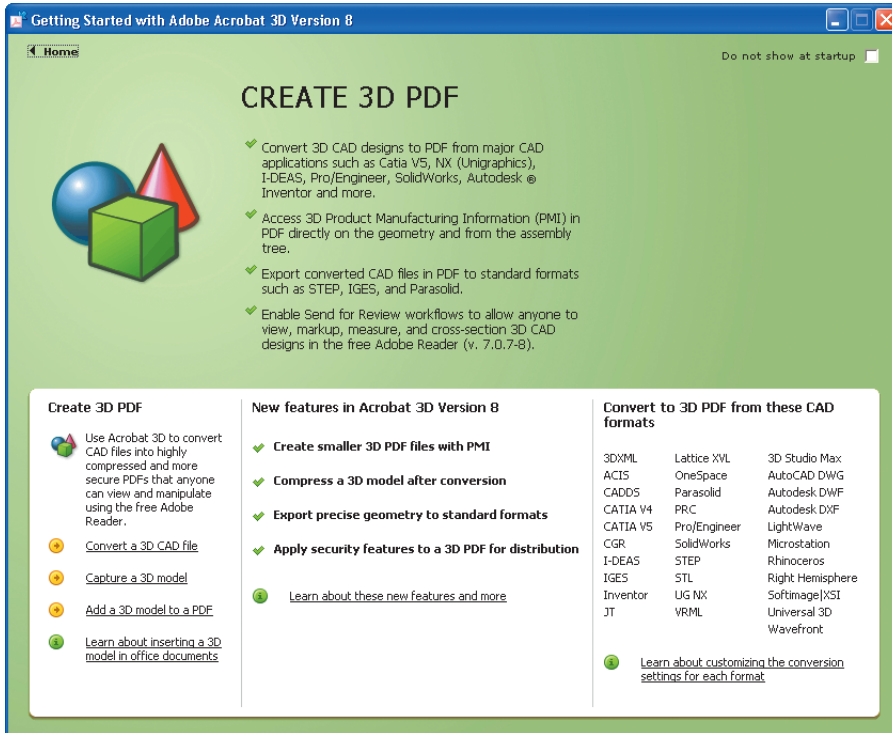
1 Start Acrobat 3D Version 8.

The Getting Started with Adobe Acrobat 3D Version 8 window opens at its home page. Each of the buttons on the home page is a link to a page about a common Acrobat task.



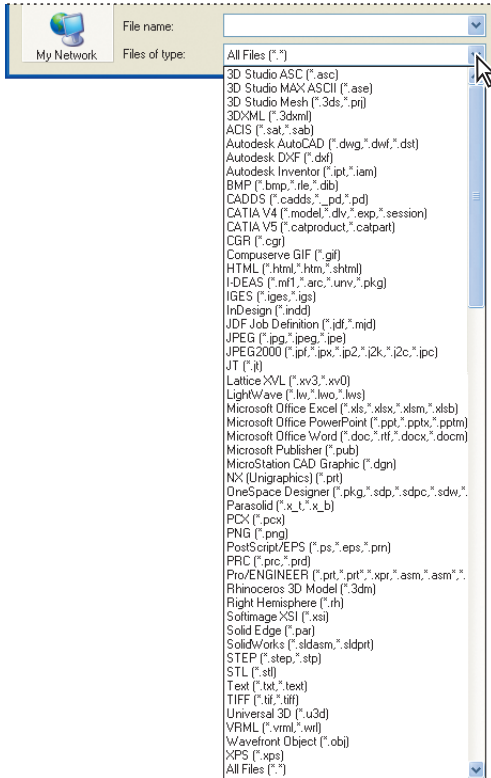
The Create 3D PDF button gives you direct links to commands for creating Adobe 3D PDF files.

2 Click the Create 3D PDF button to see a summary of how to convert your design files to 3D PDF files, a summary of the new features in Acrobat 3D Version 8, and the types of CAD file formats that can be converted directly to Adobe PDF. The green information buttons (i) on the Create 3D PDF page are links to Complete Adobe Acrobat 3D Version 8 Help system topics. The yellow buttons (a) are action links that initiate the creation of a PDF file.



3 Click the Convert a 3D CAD File link or adjacent yellow button.



4 In the Open dialog box, expand the Files of Type drop-down menu to see the file types that you can convert directly to PDF. You may need to scroll down the list to view all the file types.

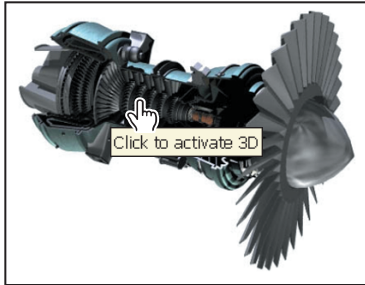


The Files of Type menu lists the file types that you can convert to 3D PDF using this method.

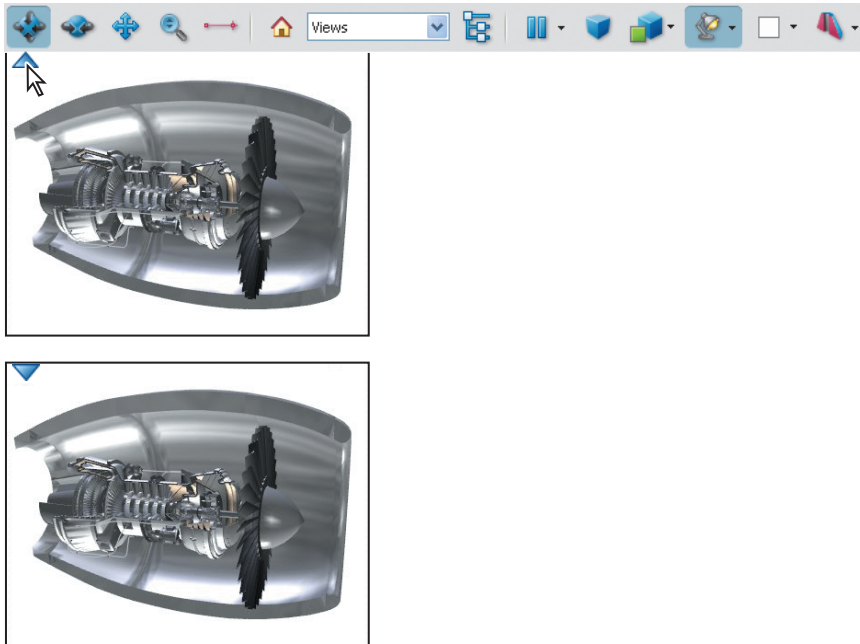
5 Click Cancel to close the dialog box without converting a file. You'll create 3D PDF files in Lesson 3, "Converting 3D Design Files to Adobe PDF." In this lesson, you'll work with a prepared 3D PDF file.

6 Click the close button in the Getting Started window to close it. You can reopen the Getting Started window at any time by choosing Help > Getting Started with Adobe Acrobat 3D Version 8.

1 Click on the engine in the lower right of the work area to select the 3D model. The Hand tool () changes to a pointing finger () when it is over a 3D model. The 3D Toolbar appears across the top of the model.



The 3D Toolbar opens automatically whenever you select 3D content. You'll learn more about the toolbar and the tools in Lesson 2, "Getting to Know the Work Area."



You can show the names of the tools or buttons, by resting your cursor over the icons on the 3D Toolbar.

- 2 Pause your cursor over the leftmost tool on the 3D toolbar. The tooltip shows the name of the tool—the Rotate tool.

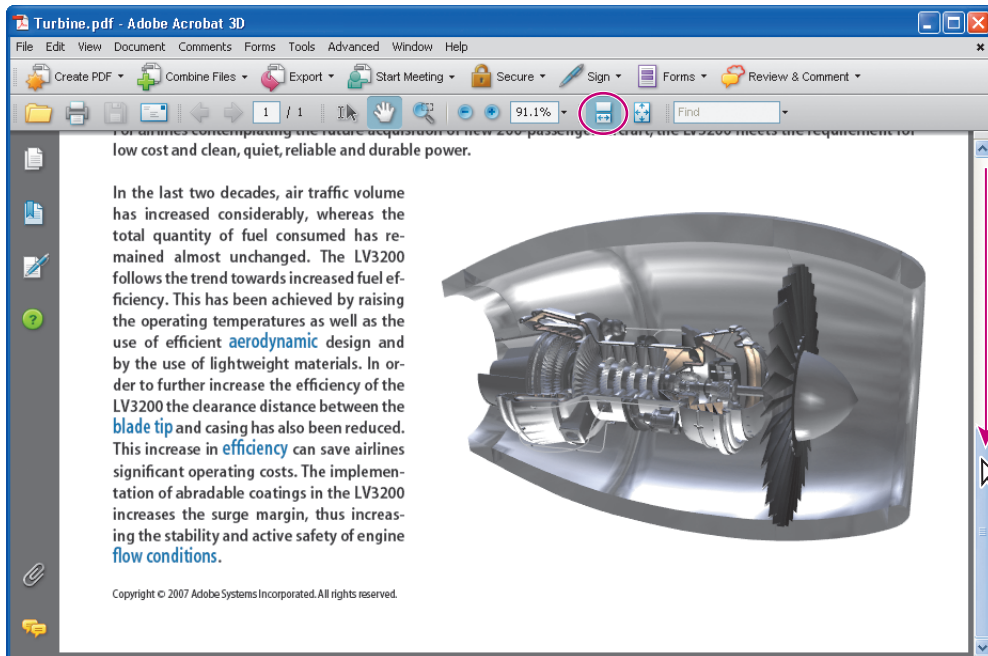


Pause your cursor over a tool or button to show the name of the tool or button in the tooltip.

Zooming in on a view

Now you'll zoom in on the 3D model.

On the Acrobat toolbar (not the 3D Toolbar), select the Scrolling Pages button (📄) and then use the scroll bar to scroll down until you see the engine on the bottom right of the page.

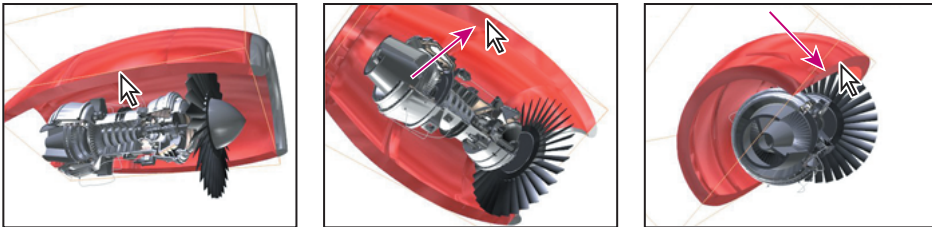


The Adobe Acrobat workspace and toolbars are described in detail in Lesson 2, “Looking at the Work Area,” in the *Adobe Acrobat 8 Classroom in a Book*. See the last page in this book for information on accessing your free copy of the *Adobe Acrobat 8 Classroom in a Book*.

1 Move your cursor over the 3D model to show the 3D Toolbar again.

Anytime you move your cursor away from the 3D model the Toolbar will disappear. You can show the Toolbar again simply by moving your cursor over the 3D model.

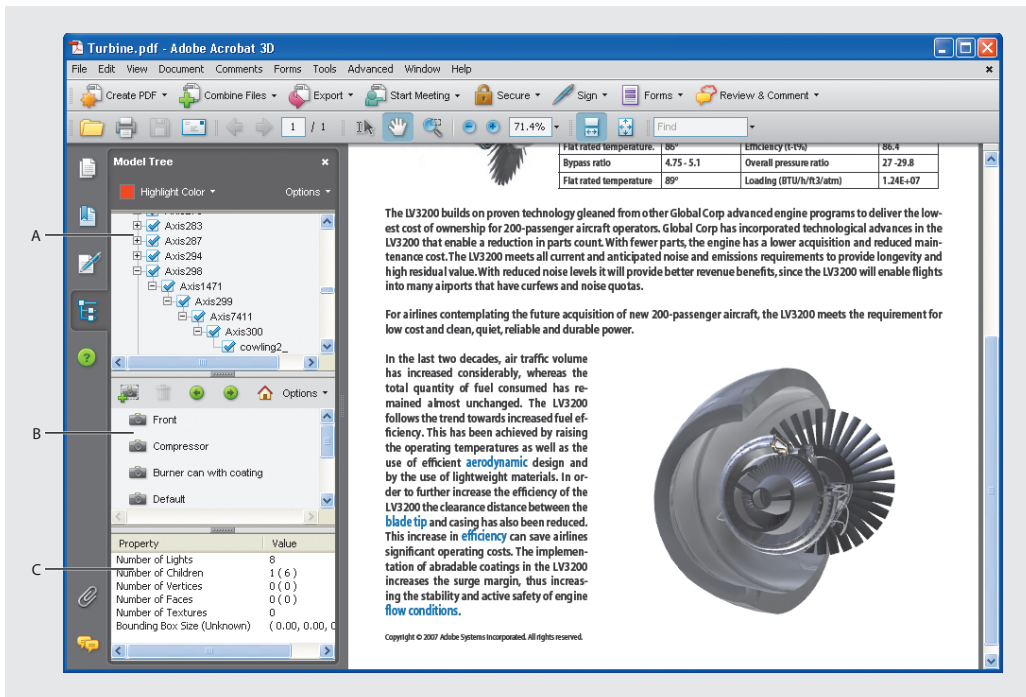
2 On the Acrobat 3D Toolbar, click the Rotate tool (↻) to select it, and then drag your cursor in the work area to rotate the model. Experiment by dragging your cursor down, up, and across and watching the degree and direction of rotation of the model. Notice that as you rotate the model, the cowling blocks your view of the engine. (Your highlight color may not be red.)



Showing and hiding parts

Now you'll see how the Model Tree enables you to work with parts or views of the model. First you'll hide the cowling that may be blocking your view.

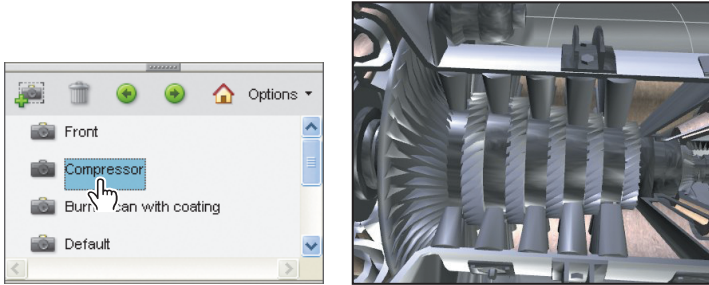
- 1 Click the Toggle Model Tree button (📁) on the 3D Toolbar to open the Model Tree in the navigation pane to the left of the work area.



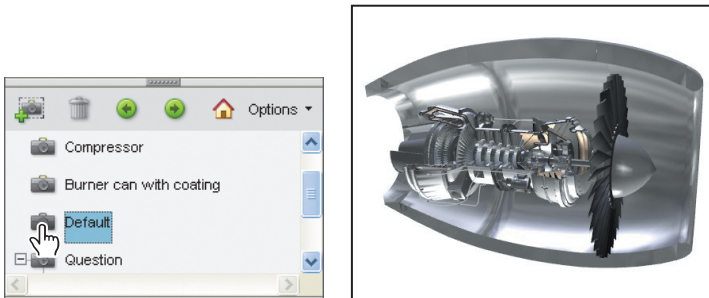
Model Tree: A. Structure pane B. Views pane C. Object Data pane

You use the Model Tree to work with parts or views of the model. For example, you can use the Model Tree to show and hide parts.

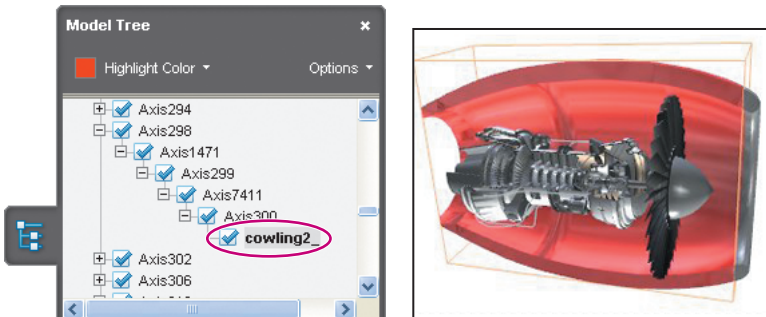
2 Look at the views in the Views pane, the middle pane in the Model Tree. Click the camera icon (📷) next to any view name to change the view. Experiment with moving to different views.



3 Click the camera icon for the Default label to return to the cross-section view.



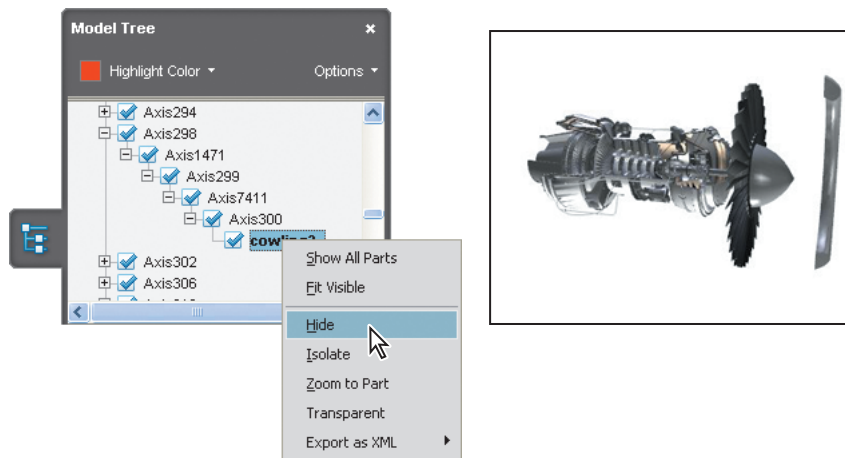
4 In the 3D model, click on the cowling to select it.




Selecting an object in the 3D model highlights that object in the Structure pane.

Notice that the selected part, `cowling2_`, is highlighted in the top part of the Model Tree pane, the Structure pane. (You may need to scroll across the Structure pane to see the entry.)

5 Right-click on the selected part `cowling2_` in the Model Tree, and choose Hide to hide the cowling.



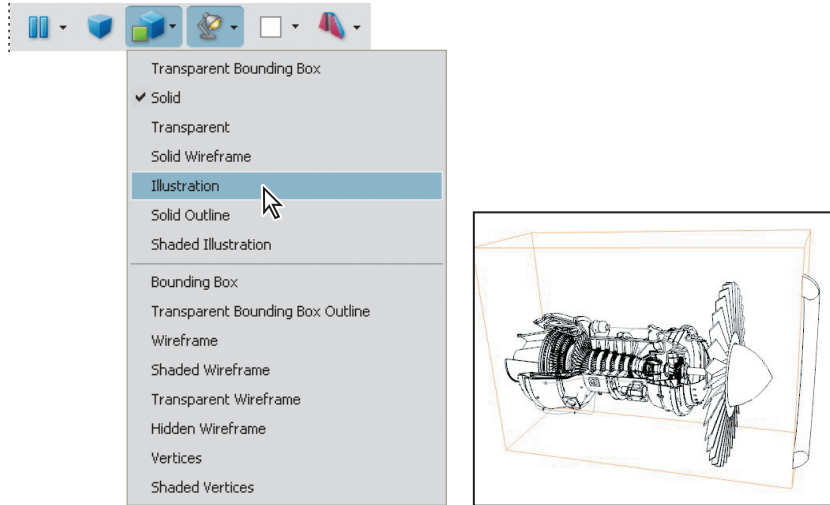
In Lesson 4, “Working with 3D PDF Models,” you’ll learn how to create views to direct users to a particular part or view of the model.

 *At any point, you can return to the default view of a 3D model by clicking the Default View button (🏠) in the Views pane or on the 3D Toolbar. The Default View button is often called the “Home” button.*

Changing the rendering mode

Now you'll change the rendering mode.

1 Move your cursor over the 3D model in the work area to display the toolbar again, and click the arrow next to the Model Render Mode button (🗨️) to see the rendering mode options. We chose Illustration.

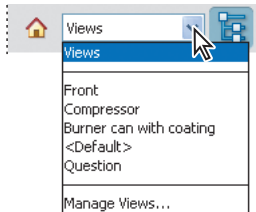


The model is rendered as an illustration. Note, however, that the model is still fully interactive.

You'll preview all the tools and buttons on the toolbar in Lesson 2, "Getting to Know the Work Area."

Looking at comments

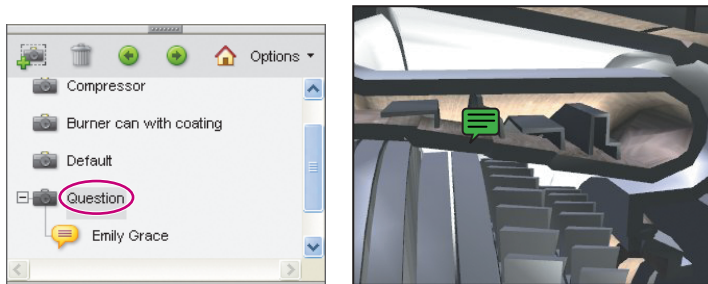
1 If necessary, move your cursor over the 3D model to display the 3D Toolbar. Then click the arrow to the right of the Views menu to see the options available.



The Views menu shows all the views saved for the model.

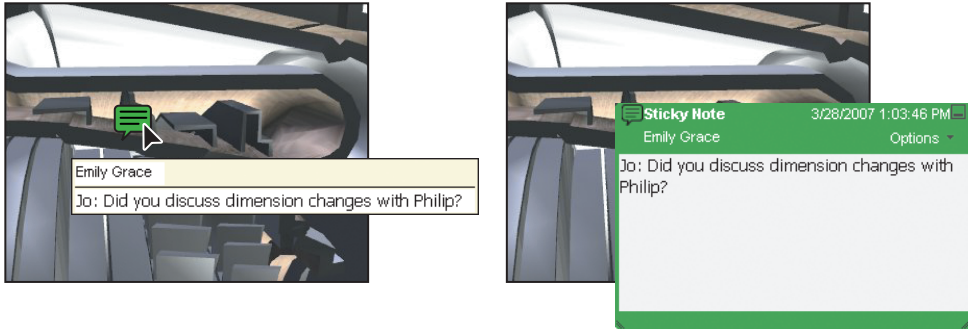
This menu lists all views that have been saved for the model. These are the same views as are displayed in the Model Tree.

2 Select the view labeled Question. The burner can is displayed with a sticky note attached. Any comment or markup applied to the model using the Acrobat tools automatically creates a named and saved view.



Notice also that the sticky note is displayed in the Views pane. You may need to scroll down in the pane to see the view associated with the sticky note.

- 3 Double-click on the note to open it and read the question.



Use the Acrobat commenting and markup tools in your collaboration process.

You'll learn more about commenting and markup and the review process in Lesson 7, "Reviewing and Commenting on 3D PDF Files."

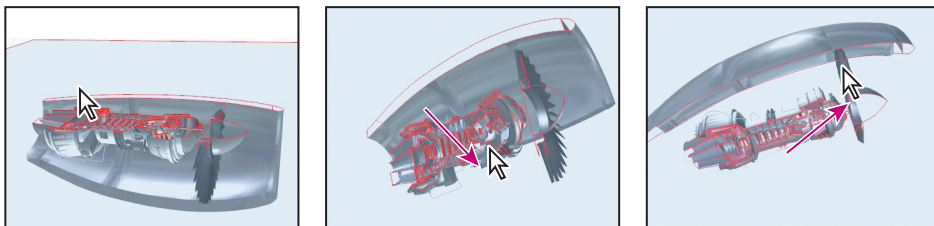
- 4 Click the Default View button (🏠) at the top of the Views pane or on the 3D Toolbar to return to the opening view.

In Lesson 4, "Working with 3D PDF Models," you'll learn how to create views to direct users to a particular part or view of the model.

toggling the cross-section on and off

You can see a cross-section of any view of the model.

- 1 Select the Toggle Cross Section button (🔪) on the 3D Toolbar to show the cross-section. (If you don't see the 3D Toolbar, move your cursor over the model.)
- 2 Select any view in the Views menu or the Views pane to see a cross-section of that view.
- 3 Select the Rotate tool (🌀) and drag up and down over the model to manipulate the cross-section.

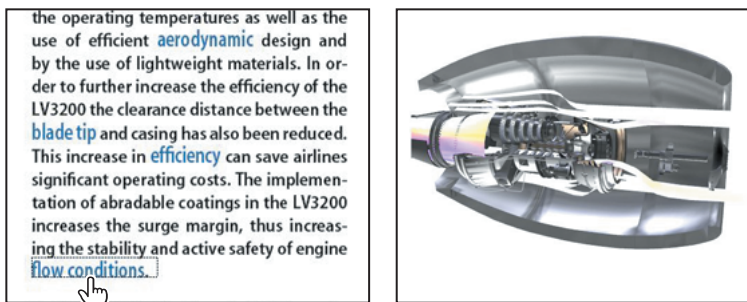


4 When you are finished, click the Toggle Cross Section button to turn off the cross-section function. Select the Default View button on the 3D Toolbar.

Animations and other special effects

With Acrobat 3D and Acrobat 3D Toolkit, you can add animations and other special effects to make your documentation more effective. The author of this technical document is able to show air flow through the engine as well as illustrate some disassembly and reassembly sequences.

1 In the text to the left of the 3D model, click the “aerodynamic” link (blue) to show the rotation of the turbine and associated parts. Click the “blade tip” link to show the disassembly of part of the model. Click the “efficiency” link to reassemble the model. And click the “flow conditions” link to show air flow.



You'll learn how to create animations in Lesson 8, “Creating 2D Graphics and Animations with the Acrobat 3D Toolkit.”

2 Choose File > Close and close your file without saving any changes. Exit Acrobat 3D.

As you work through the lessons in this book, you'll learn how to use the various tools and buttons in the 3D Toolbar and you'll learn how to use the Model Tree to best prepare your model for sharing with colleagues. You'll also learn how to use the Acrobat 3D Toolkit to edit 3D models that will enhance your documentation.

Review

▶ Review questions

- 1 How can you open the Getting Started window?
- 2 How can you rotate a 3D model?
- 3 How can you move from one predefined view to another?

▶ Review answers

- 1 Choose Help > Getting Started with Adobe Acrobat 3D Version 8.
- 2 The Rotate tool is selected by default. Dragging your cursor across the model will cause the model to rotate.
- 3 Use the Views pane in the Model Tree or the Views menu on the 3D Toolbar to select a view.

