

CAD Documents

Along with Documents, a Part can have one or more Computer Aided Design (CAD) Documents associated with it. A CAD Document can be a drawing, a specification, 3D model, etc. created in a CAD authoring tool.

A CAD Document can have Files associated with it that are kept in the Aras Innovator Vault. If you have purchased a third-party integration to a CAD tool, you can attach a native File to a Part using your CAD Authoring tool and a viewable File. This subscription enables you to view and work with native Files using Aras Innovator.

Important

Some features of CAD Documents, such as transformation of native files into other viewable formats, require an Aras subscription.

Creating a CAD Document

To create a CAD Document:

1. Go to **Contents** → **Documents** → **CAD Documents**.
2. Select **Create New CAD Document**. The new CAD Document appears. Enter the necessary information.



CAD Document 1

 Save

 Done

Delete

^ CAD Document

Document Number Revision State

Name

Type

Authoring Tool

Version





Description

Assigned Creator

...

[Select an image...](#)

Designated User

...

From Template

☐ Changes Pending

☐ Standard

☐ Template

Part

Native File

 [Select file...](#)

Viewable File

 [Select file...](#)

^ Structure Parents Files Changes

- **Document Number** – (Required) The CAD Document number.
- **Name** – The name of the CAD Document.
- **Type** – This is the classification type for the CAD Document. The classification dialog displays the CAD Document classification tree. The CAD Document classification tree can be adjusted and extended as needed by an administrator.
- **Authoring Tool** – The application used to create the CAD Document.
- **Version** – The version of the authoring tool.
- **Description** – Remarks about the CAD Document.
- **Assigned Creator** – This is the user responsible for the design or the content of the CAD Document. The Assigned Creator is often identified as the Owner of the item, who may be different from the user creating the CAD Document in the system.
- **Designated User** – This is the user responsible for the management, usage, and review of the CAD Document.



- **Select an image** – This allows you to select an image using the Image Browser to generate a thumbnail for the CAD Document.
- **Changes Pending** – The Changes Pending flag is automatically set when the CAD Document is associated with a change item.
- **Standard** – If the CAD Document follows a standard, select the Standard check box.
- **Template** – If the CAD Document is going to be used as a template, select the Template check box.
- **Extended Classification** – This allows you to assign values to Items based on the Item's extended classification.

Important

There are no extended classifications provided for CAD Documents out of the box.

3. If it is necessary to attach a native or viewable File to the CAD Document, use the procedure described in section [Attaching Native and Viewable CAD Files to a CAD Document](#).
4. If it is necessary to attach additional Files to the CAD Document, use the procedure described in section [Attaching Other Files to a CAD Document](#).
5. Once you have entered the necessary information, click **Save** or **Done** to save your changes.

Creating a CAD Document from a Part

To create a new CAD Document and attach it to a Part:

1. Open the **Part** where the CAD Document will be added.
2. Click **Edit**.
3. Go to the **CADDocuments** tab.
4. Click **New CAD Document** . A new CAD Document row appears in the CAD Documents grid on the Part.

CAD Documents										
Document Nu...	Revi...	Name	Type	State	Native File [...]	Viewable File [...]	Authoring Tool	Chan...	Stand...	Templ...
					Select File...	Select File...		☐	☐	☐



5. Click the **Document Number** cell and enter a document number for the CAD Document.

Important

The Document Number is required and must be provided by the user.

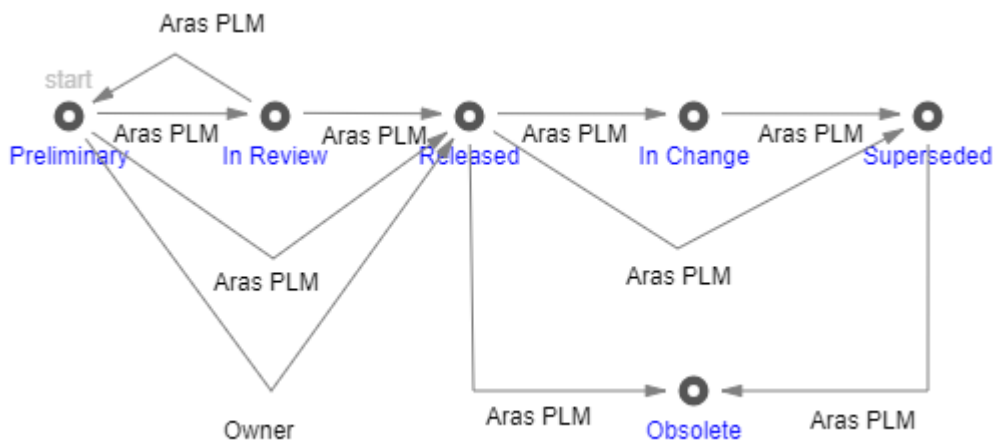
6. Enter any additional data by clicking on the corresponding cell in the BOM table.

7. Click **Save** or **Done** to save your changes.

CAD Documents Life Cycle

By default, the CAD Document Life Cycle has the following states: Preliminary, In Review, Released, In Change, Superseded, and Obsolete. An administrator can change the Life Cycle Map if it is necessary to meet specific business requirements.

The figure below shows the default CAD Document Life Cycle. A new CAD Document starts in the **Preliminary** state and can be promoted either automatically or manually. Both the simplified and CMII change management processes can automatically promote the CAD Documents. The associated Life Cycles are automatically controlled by Workflows for those CAD Documents that are included in the affected items list. CAD Documents that are not included in the list because they do not require a full change process can be promoted using either manual release or revision if certain requirements are met. By default, a CAD Document Owner can release a CAD Document. For further details on this feature, refer to section [Manual Promotion and Revise](#) .



CAD Document Relationships



A CAD Document can have relationships with other items. The Relationships accordion keeps these relationships grouped in separate Relationships tabs. Each Relationships tab represents a single relationship type.

The screenshot shows a software interface for managing a CAD Document. At the top, there's a header bar with the document ID 'CAD-0100', a star icon, and a list icon. Below this is a toolbar with icons for 'Edit', 'Refresh', 'Undo', 'Redo', 'Relationships', 'Properties', and a menu icon. The main content area is titled 'CAD Document' and contains several input fields and checkboxes. The fields are organized into two columns. The left column includes 'Document Number' (CAD-0100), 'Revision' (A), 'State' (Preliminary), 'Name' (25mm Aluminum Spacer), 'Type', 'Authoring Tool', 'Version', and a 'Description' text area. The right column includes 'Assigned Creator' (Innovator Admin), 'Designated User', 'From Template', and a 'Part' section with checkboxes for 'Changes Pending', 'Standard', and 'Template'. To the right of these checkboxes are two input fields labeled 'Native File' and 'Viewable File'. At the bottom, there's a tabbed interface with 'Structure' selected, and other tabs for 'Parents', 'Files', and 'Changes'.

Document Number	Revision	State	Assigned Creator
CAD-0100	A	Preliminary	Innovator Admin

Name	Designated User
25mm Aluminum Spacer	

Type	Authoring Tool	Version	From Template

Description

☐ Changes Pending

☐ Standard

☐ Template

Part

Native File

Viewable File

Structure Parents Files Changes

Structure – A single-level CAD hierarchy editor that enables you to view and manage the direct Children of this CAD Document. For more details, refer to section Hierarchy of CAD Documents.

Parents – A read-only list of the CAD Document's direct Parents.

Parts – A read-only list of the Parts attached to the CAD Document. This tab appears only when a CAD Document is attached to more than one Part. For more details, refer to section Parts Associated with a CAD Document.

Files – A list of Files attached to the CAD Document. Typically, this tab hosts additional CAD Document Files. The **Native File** property of the CAD Document is a link to a native CAD File. The **Viewable File** property of the CAD Document is a link to a viewable representation of the native CAD File. For more details, refer to section Managing CAD Files.

Changes – Displays a list of change items, such as DCOs, Express ECOs and EDRs, where this CAD Document is an affected item. For more details, refer to section Change Management.

Hierarchy of CAD Documents



If you have purchased a third-party integration to a CAD authoring application, you can import Part families that were created with this CAD application into Aras Innovator. The Product Engineering (PE) application's capabilities enable you to manage the imported Part families as well as to create new ones.

A Part family is a multi-level hierarchy of CAD Documents that consist of single-level CAD Documents Relationships. The PE application supports the management of multi-level CAD Documents hierarchies through creating, replacing, and removing single-level CAD Documents Relationships. A single-level CAD Documents Relationship is a Parent-Child relationship between two CAD Documents. If a Parent has a Child that is also a Parent, it is a multi-level CAD Documents hierarchy.

If you add a CAD Document to another CAD Document, you create a Parent-Child relationship between them. If the Parent had no Children before, then a new hierarchy of CAD Documents is created and vice versa. If you remove a CAD Document from another CAD Document, you delete a Parent-Child relationship between them. If the removed Child was the last one, then the hierarchy of CAD Documents is deleted.

A multi-level hierarchy of CAD Documents can represent a proper BOM hierarchy.

There are two ways to set up a multi-level hierarchy of CAD Documents:

- Add existing Children to a Parent. This approach is used when building a new assembly using existing CAD Documents. For more details on this approach, refer to section [Creating a CAD Document Relationship](#).
- Create new Children while adding them to a Parent. This approach is convenient for populating nested CAD Documents or creating hierarchies quickly without getting into the details of each Child. However, it is still necessary to complete each Child later. For more details on this approach, refer to section [Creating a CAD Document from another CAD Document](#).

Creating a CAD Document Relationship

This approach is used for building a new assembly using existing CAD Documents.

To add an existing CAD Document to another CAD Document:

1. Open the Parent CAD Document.



Document fields.

7. Click **Save** or **Done**. The new CAD Document is created and attached to the Parent CAD Document.

Replacing a CAD Documents Relationship

To replace a Child CAD Document in a CAD Document Relationship:

1. Open the Parent CAD Document.
2. On the Parent toolbar, click **Edit**.
3. Go to the **Structure** accordion tab.
4. Right-click the Child CAD Document to be replaced and then click **Replace**. The Search dialog appears.
5. Search for and select a replacement CAD Document. The selected CAD Document replaces the existing CAD Document.
6. Click **Save** or **Done**. The Children are replaced.

Removing a CAD Documents Relationship

To remove a Child CAD Document from a Parent CAD Document:

1. Open the Parent CAD Document.
2. On the Parent toolbar, click **Edit**.
3. Go to the **Structure** accordion tab.
4. Click on the CAD Document(s) to be deleted and then click **Delete CAD Document**.
5. Click **Save** or **Done**. The selected Children are removed.

Managing CAD Documents in Parts

For a single Part, you can attach, replace, and remove CAD Documents. If you have purchased a third-party CAD integration tool, you can use it to attach native CAD and viewable files to a Part using the CAD authoring tool. This subscription enables you to view and work with CAD File representations in Aras Innovator using viewers for Parts and CAD Documents.

Important

You cannot attach Parts to a CAD Document.

Adding CAD Documents to a Part



To add an existing CAD Document to a Part:

1. Open the **Part** where the CAD Document will be added.
2. Click **Edit**.
3. Go to the **CAD Documents** tab.
4. Click Add CAD Documents . The Search dialog appears.
5. Search for and select a CAD Document to add.
6. Click **Save** or **Done** to save your changes.

Replacing CAD Documents in a Part

To replace a CAD Document in a Part:

1. Open the **Part** where the CAD Document will be added.
2. Click **Edit**.
3. Go to the **CAD Documents** tab.
4. Right-click on the CAD Document to be replaced → **Replace**. The Search dialog appears.
5. Search for and select a CAD Document. The selected CAD Document replaces the selected CAD Document.
6. Click **Save** or **Done** to save your changes.

Removing CAD Documents from a Part

To remove a CAD Document from a Part:

1. Open the **Part** where the CAD Document will be added.
2. Click **Edit**.
3. Go to the **CAD Documents** tab.
4. Click the CAD Document to be deleted and then click Delete Part CAD.
5. Click **Save** or **Done** to save your changes.

Working with CAD Documents from a Part

If you have purchased a third-party CAD integration tool, you can use it to attach a native CAD File to a Part, using the CAD authoring tool, for viewing and working in Aras Innovator.

Once the integration license is used, and files are imported into Aras Innovator, the viewers will appear in a sidebar on the left-hand side of the Part view, allowing you to view and work with the CAD Files and images attached to the Part.





Part

Part Number: MP0101 Revision: A State: Preliminary Assigned Creator:

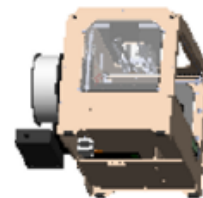
Name: Makerbot Replicator Designated User:

Type: Assembly Unit: EA Make / Buy: Make Cost: Effective Date:

Long Description

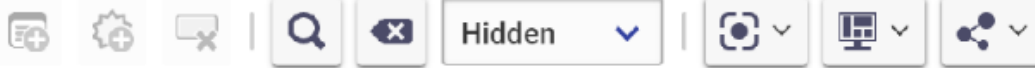
The MakerBot Replicator by MakerBot. Published on March 12, 2012. www.thingiverse.com/thing:18813

☐ Changes Pending



BOM BOM Structure Alternates AML Documents CAD Documents Goals Changes

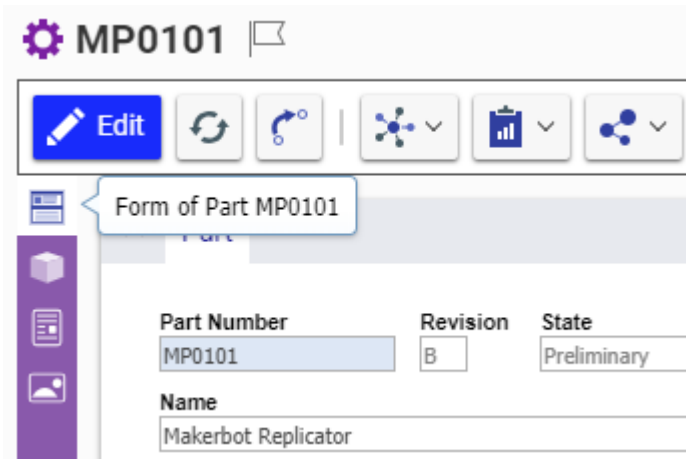
CAD Documents



Document Number	Revisi...	Name	Type	State
MP0101-D	B	MakerBot Replicator Drawing	Mechanical/Drawing	Preliminary
MP0101	B	MakerBot Replicator	Mechanical/Assembly	Preliminary



Form shows the Part view.

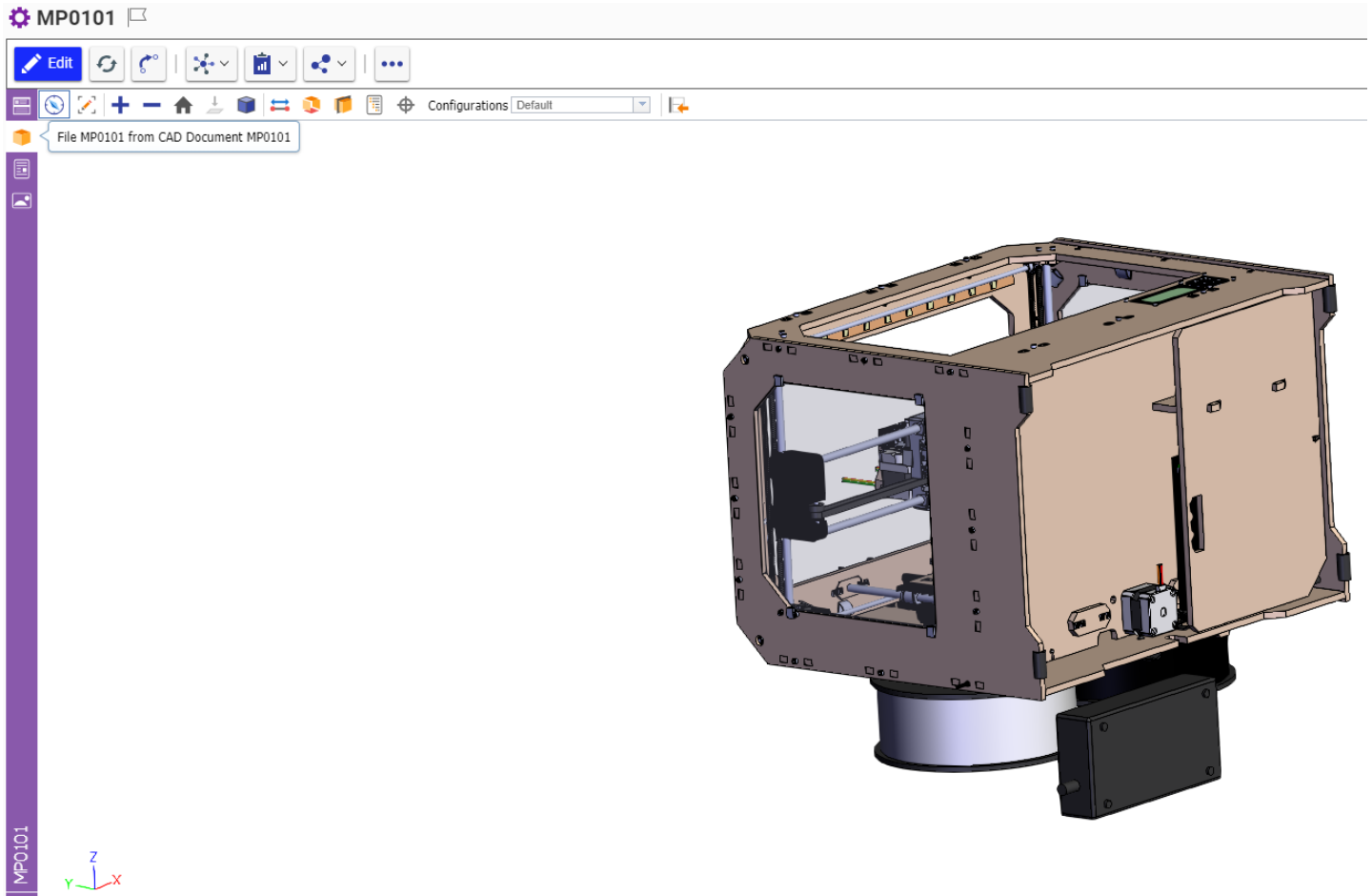


The screenshot shows a software interface for a part named MP0101. At the top, there is a header bar with a gear icon and the text "MP0101". Below this is a toolbar with several icons: a blue "Edit" button, a circular arrow icon, a circular arrow with a plus icon, a network diagram icon with a dropdown arrow, a clipboard icon with a dropdown arrow, and a share icon with a dropdown arrow. To the left of the main form area is a vertical sidebar with three icons: a cube, a document, and a person. The main form area is titled "Form of Part MP0101" and contains the following fields:

Part Number	Revision	State
MP0101	B	Preliminary

Below the table, there is a "Name" field with the text "Makerbot Replicator".

Monolithic Viewer is a simple tool for viewing and working with 3D CAD Model representations. For more details, refer to section Working with CAD Files.



PDF Viewer displays the PDF file.



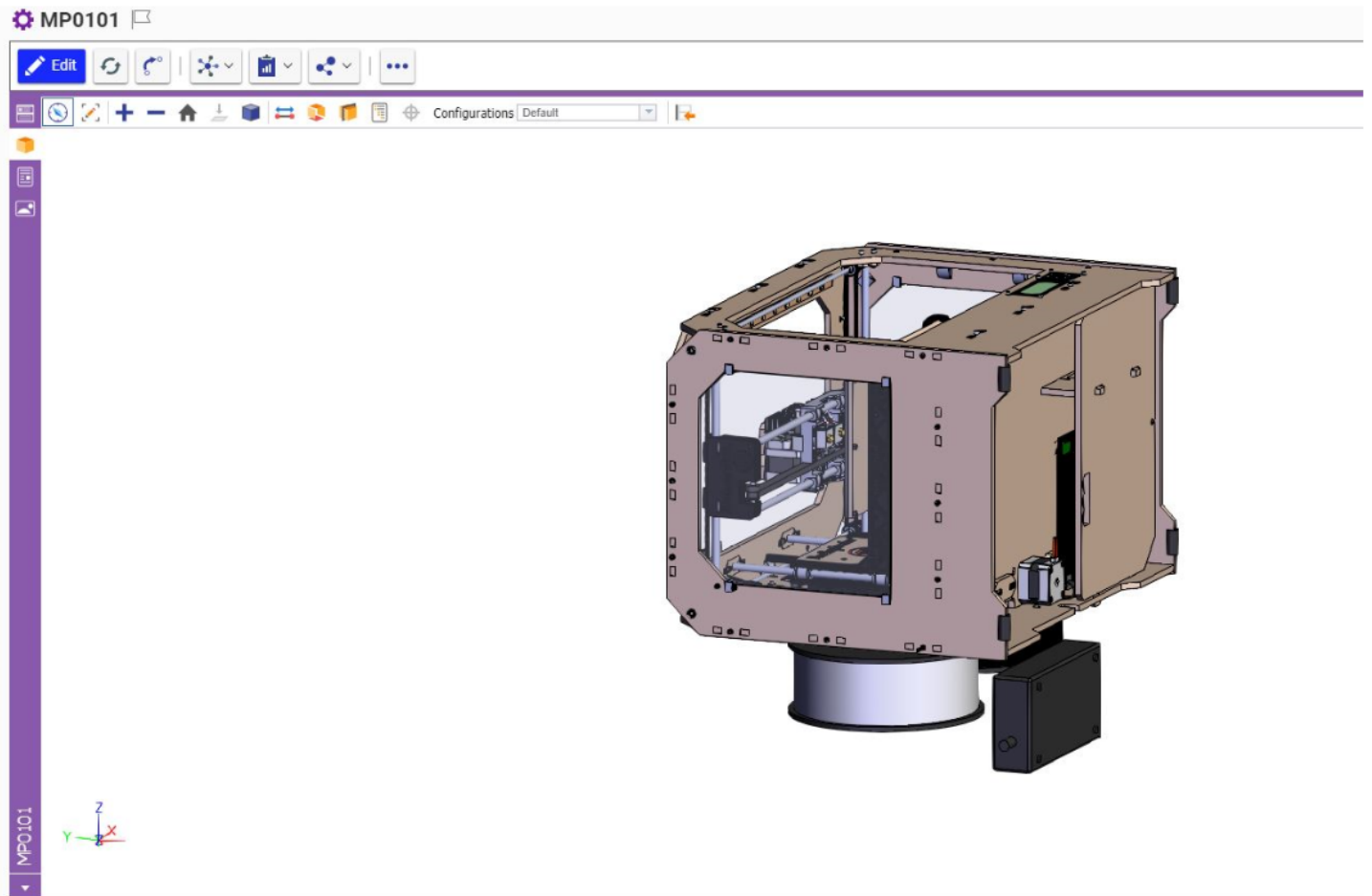
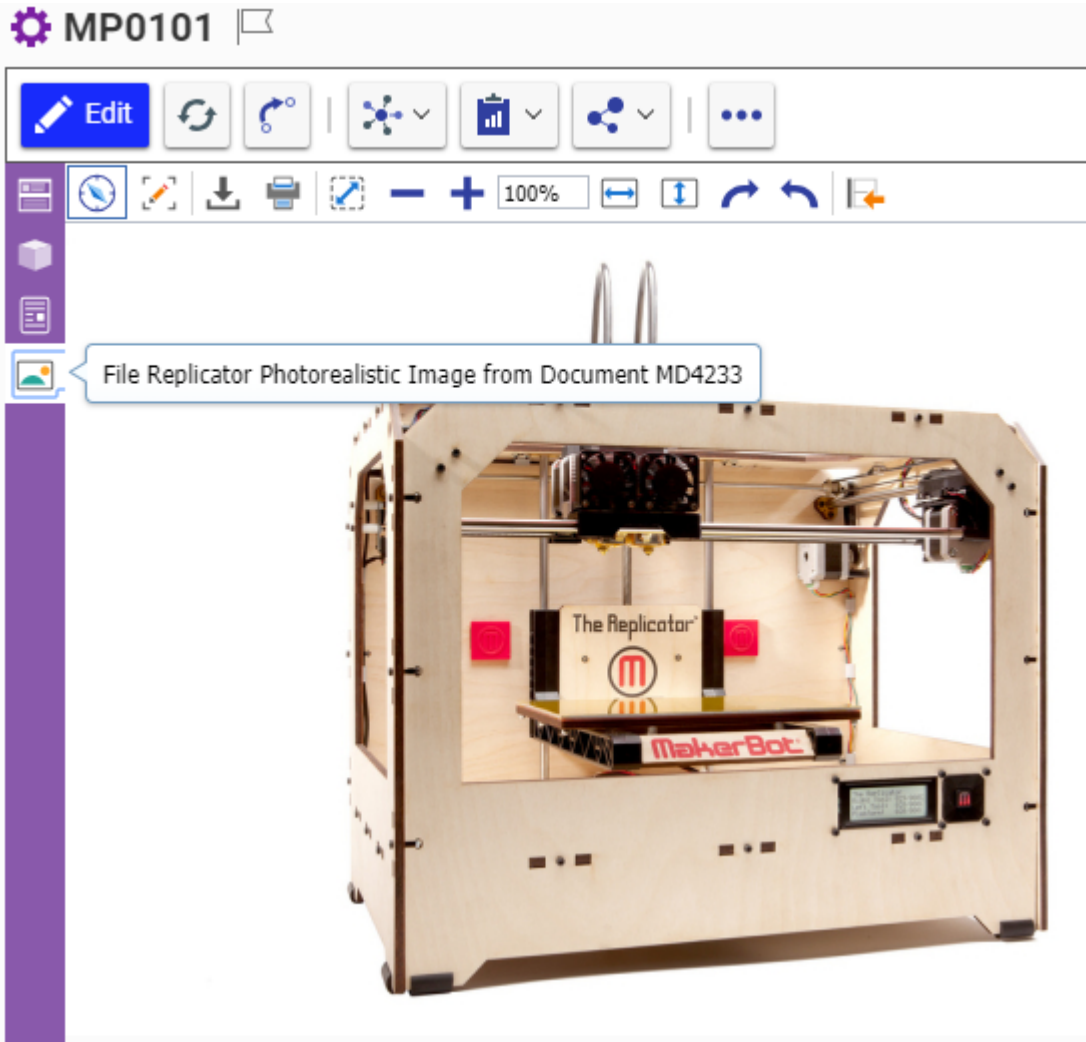
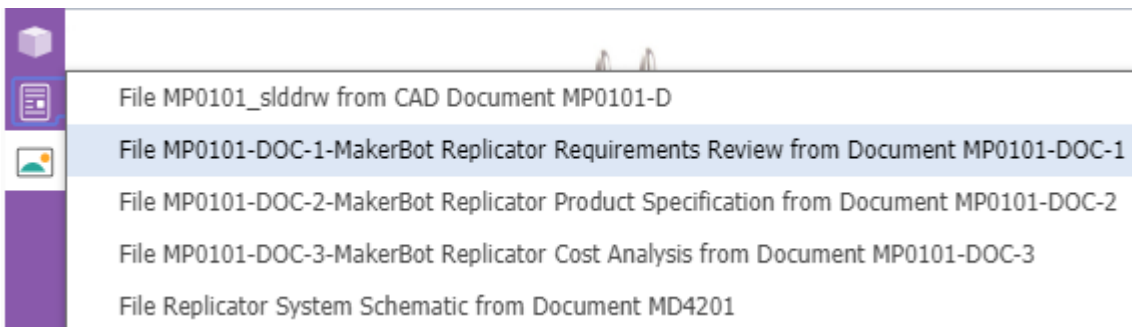


Image Viewer displays the image file.

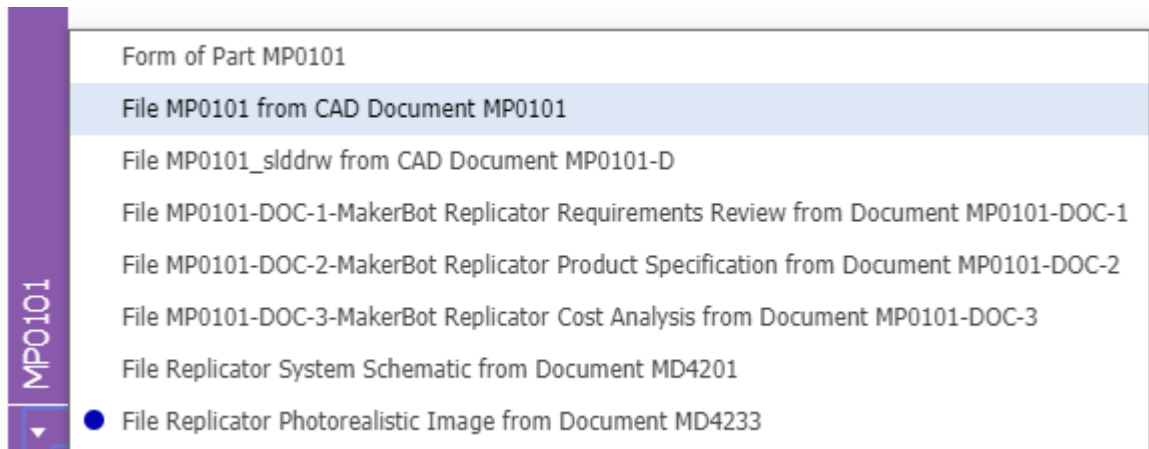


If there are several Files of the same type, you are prompted to choose one.



Alternatively, you can view the list of all possible navigation options within the sidebar by selecting the arrow at the bottom of the sidebar and making your selection for the viewer you wish to view. This

list includes the Part Form view. It is possible to view Files attached to the Part. The blue circle marks the currently selected viewer.



Managing CAD Files

A CAD Document can have Files associated with it that are kept in the Aras Innovator Vault. If you have purchased a third-party CAD integration tool, you can use it to attach, download, replace, and remove native CAD and viewable files to a Part using the CAD authoring tool. This subscription also enables you to view and work with CAD File representations in Aras Innovator directly from the corresponding CAD Document.

In Aras Innovator, CAD Files and Files are not versionable, but CAD Documents are. When a CAD Document is versioned, the references to its Files remain the same. In other words, old versions of the CAD Document keep old Files. For example, if Version 1 of a CAD Document contains File A, then gets versioned, after which, File A is replaced with File B, the previous version of the CAD Document (Version 1) has File A, and the current version has File B. To access the old Files, you can view the appropriate version of the CAD Document. For details about how to access CAD Document versions, refer to section Versions Exploration.

Attaching Native and Viewable CAD Files to a CAD Document

For a single CAD Document, you can attach only one native and one viewable CAD File using the following procedure:

1. Open the CAD Document.

2. Click **Edit**.
3. Click the **Select file** link in the Native file field. The Open file dialog appears.

CAD Document

Document Number

MP0370c

Revision

A

State

Preliminary

Name

M3xNN Socket Cap Bolt

Type

Part

Authoring Tool

SolidWorks

Version

sw2014

Description

Assigned Creator

Innovator Admin

Designated User

Innovator Admin

From Template

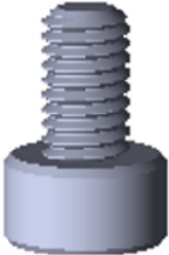
☐ Changes Pending

☐ Standard

☐ Template

Part

Select an image...



Native File

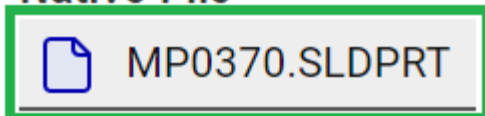
 [Select file...](#)

Viewable File

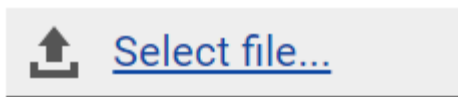
 [Select file...](#)

4. Select a Native CAD File. The **Select file** link is replaced with the name of the selected Native CAD File.

Native File



Viewable File



5. Click the **Select file** link in the Viewable file field. The Open file dialog appears.



Native File



MP0370.SLDPRT

Viewable File



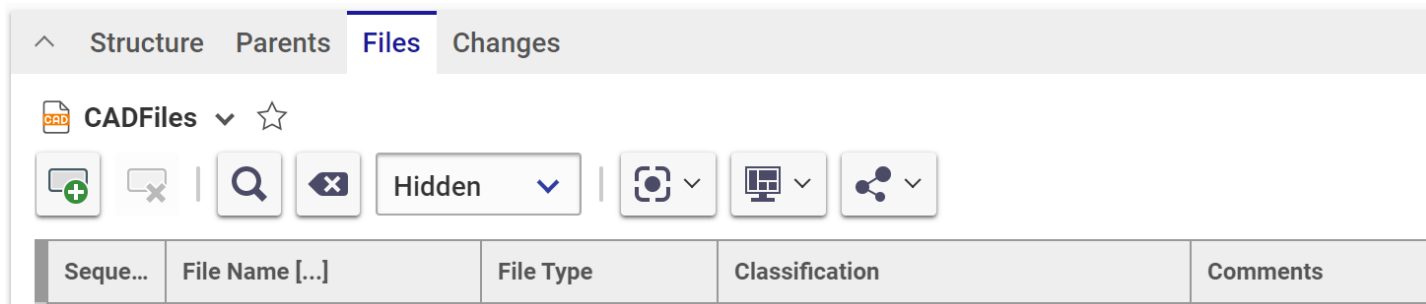
[Select file...](#)

6. Select a viewable representation of the Native CAD File. The **Select file** link is replaced with the name of the selected Viewable File.
7. Click **Save** or **Done** to save your changes. The names of the selected Files become links and the Files are attached to the CAD Document.

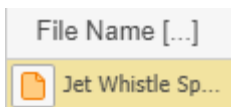
Attaching Other Files to a CAD Document

To attach additional Files to a CAD Document:

1. Open the CAD Document.
2. Click **Edit**.
3. Go to the **Files** accordion tab.
4. Click **New CAD Files** on the Files accordion toolbar. A new row appears at the bottom of the Files grid.



5. Click the **Select File** link in the File Name cell. The Open file dialog appears.
6. Select the File to be uploaded. The **Select file** link is replaced with the name of the selected File.



Important

Aras Innovator will automatically provide a file type to the **File Type** cell depending on the File's extension when you save the CAD Document.

7. Specify the Classification of the File by clicking the **Classification** cell, selecting the **ellipsis** button, and selecting the appropriate classification.
8. Provide any additional information about the File in the **Comments** cell as needed.
9. Click **Save** or **Done** to save your changes and attach the additional File to the CAD Document.

Downloading Native and Viewable CAD Files from a CAD Document

You can download native and viewable CAD Files using either of the following methods:

- The file links on the CAD Document
- The Manage file property dialog

To download native and viewable CAD Files using the file links on the CAD Document, click the corresponding link on the CAD Document:

CAD Document

Document Number

MP0370c

Revision

A

State

Preliminary

Name

M3xNN Socket Cap Bolt

Type

Part

Authoring Tool

SolidWorks

Version

sw2014

Description

Assigned Creator

Innovator Admin

Designated User

Innovator Admin

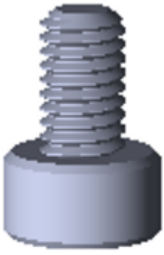
From Template

☐ Changes Pending

☐ Standard

☐ Template

Part



Native File

 MP0370.SLDPRT

Viewable File

 [Select file...](#)

When selecting the link of the Viewable File, a new browser window appears showing the viewable file and providing functionality for viewing and downloading.



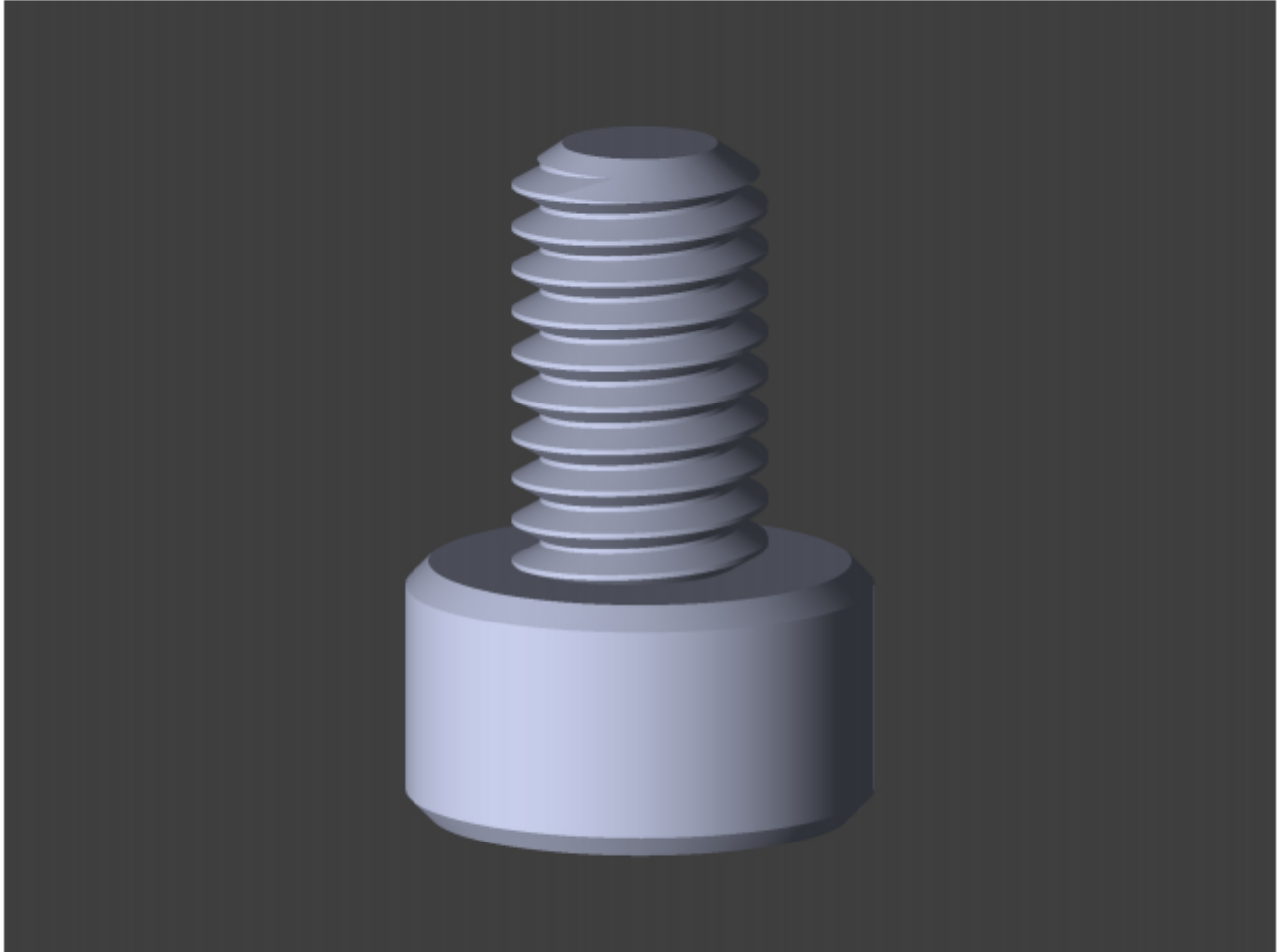
Important

The view of a viewable file and functionality available depend on your browser.





Download



To download files using the Manage file property dialog, select the **Manage file property** icon for the corresponding file:

CAD Document

Document Number

MP0370c

Revision

A

State

Preliminary

Name

M3xNN Socket Cap Bolt

Type

Part

Authoring Tool

SolidWorks

Version

sw2014

Description

Assigned Creator

Innovator Admin

Designated User

Innovator Admin

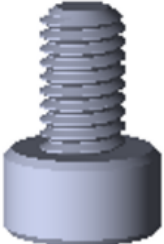
From Template

☐ Changes Pending

☐ Standard

☐ Template

Part



Native File

 [MP0370.SLDPRT](#)

Viewable File

 [Select file...](#)

Native File

 [MP0370.SLDPRT](#)

Viewable File

 [MP0370.pdf](#)

You can either select the hyperlink in the Manage file property dialog or use the Download file button to download the File.

Manage file property



[MP0370.SLDPRT](#)

0 Bytes - SolidWorks Part

6/23/2021, 3:39 PM



OK

Cancel

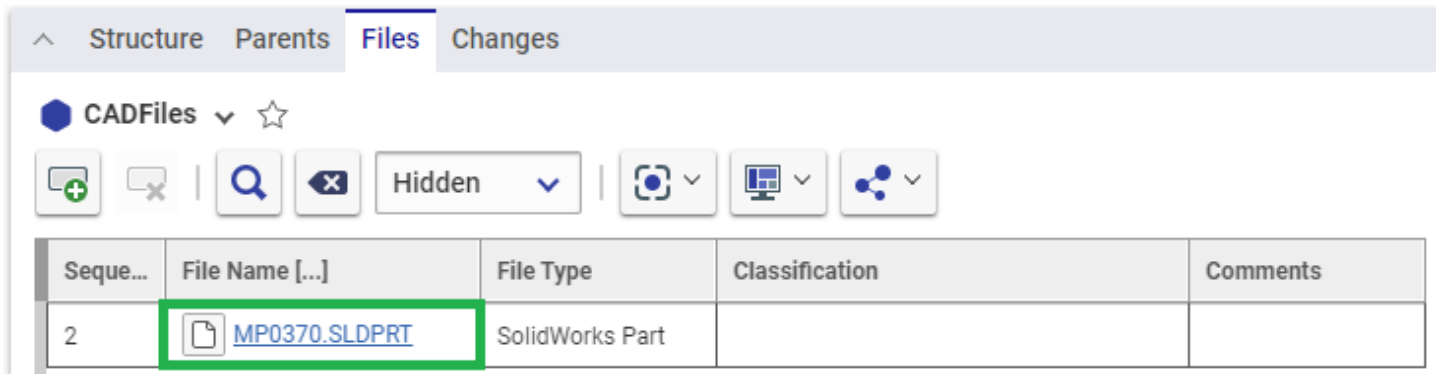
Downloading Other Files from a CAD Document



You can download additional Files from a CAD Document using either of the following methods:

1. The File Name link in the Files grid.
2. The Manage file property dialog.

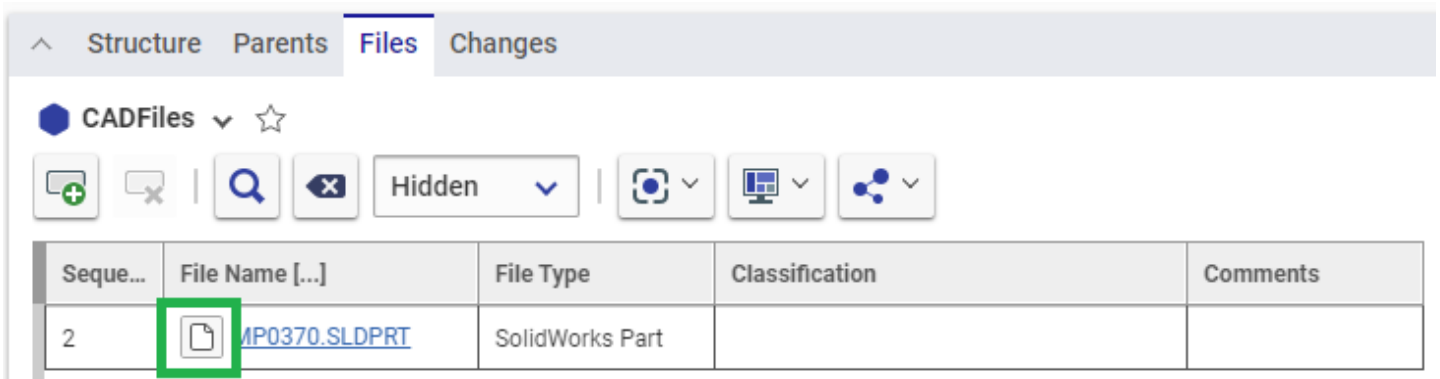
To download files from the CAD Document, click on the corresponding link in the Files tab on the CAD Document:



The screenshot shows the CADFiles interface with the 'Files' tab selected. The interface includes a top navigation bar with 'Structure', 'Parents', 'Files', and 'Changes'. Below the navigation bar, there is a 'CADFiles' section with a dropdown menu and a star icon. A toolbar contains various icons for file management, including a search icon, a 'Hidden' dropdown, and a 'Download' icon. The main area displays a table with the following columns: 'Seque...', 'File Name [...]', 'File Type', 'Classification', and 'Comments'. The table contains one row with the following data:

Seque...	File Name [...]	File Type	Classification	Comments
2	 MP0370.SLDPRT	SolidWorks Part		

To download files from the CAD Document using the Manage file property dialog, select the Manage file property button for the corresponding file:



The screenshot shows the CADFiles interface with the 'Files' tab selected. The interface includes a top navigation bar with 'Structure', 'Parents', 'Files', and 'Changes'. Below the navigation bar, there is a 'CADFiles' section with a dropdown menu and a star icon. A toolbar contains various icons for file management, including a search icon, a 'Hidden' dropdown, and a 'Download' icon. The main area displays a table with the following columns: 'Seque...', 'File Name [...]', 'File Type', 'Classification', and 'Comments'. The table contains one row with the following data:

Seque...	File Name [...]	File Type	Classification	Comments
2	 MP0370.SLDPRT	SolidWorks Part		

You can either select the hyperlink in the Manage file property dialog or use the Download file button null to download the File.

Manage file property



[MP0370.SLDPRT](#)

0 Bytes - SolidWorks Part

6/23/2021, 3:39 PM



OK

Cancel

If you are downloading a viewable file, such as a PDF, instead of starting the downloading process of your operating system, a new browser window appears showing the viewable file and providing functionality for viewing and downloading. Use the file download procedure of your browser to download the file and close the browser window with the viewable file when completed.

Replacing Native and Viewable CAD Files in a CAD Document

To replace the native and viewable files on a CAD Document:

1. Open the **CAD Document**.
2. Click **Edit**.
3. Click the **Manage file property** button under Native File.

CAD Document

Document Number	Revision	State
MP0370c	A	Preliminary

Name

M3xNN Socket Cap Bolt

Type	Authoring Tool	Version
Part	SolidWorks	sw2014

Description

Assigned Creator

Innovator Admin

...

Designated User

Innovator Admin

...

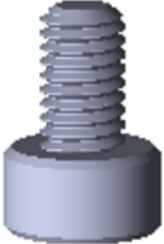
From Template

☐ Changes Pending

☐ Standard

☐ Template

Part



Native File

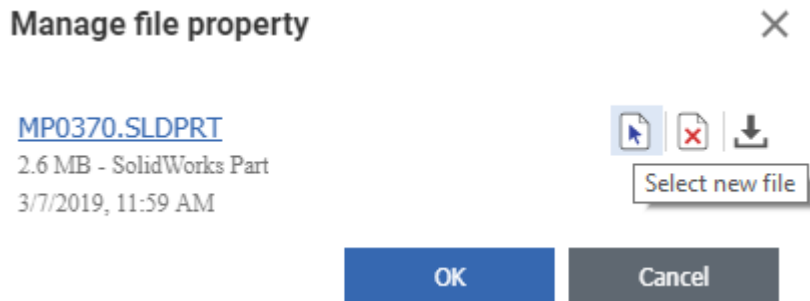
 MP0370.SLDPRT

Viewable File

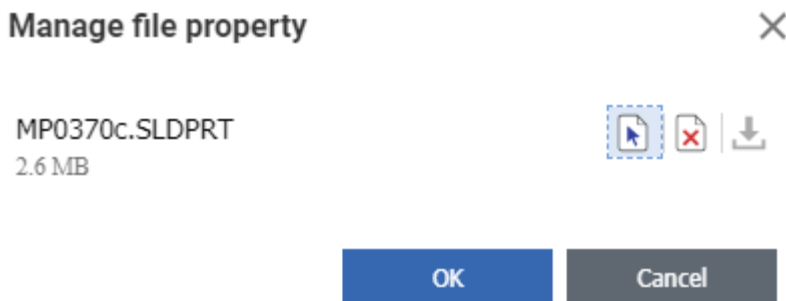
 [Select file...](#)



The **Manage file property** dialog appears.



4. Click the **Select new file** button.
5. Search for and select the replacement Native File. In the **Manage file property** dialog, the link with the name of the old native File is replaced with the name of the new Native File. There is no information on the new Native File.



6. Click **OK**. In the CAD Document view, a link with the name of the old native File is replaced with the name of the new native File.
7. Repeat steps 3-6 using the **Manage file property** button under Viewable File.
8. Click **Save** or **Done** to save your changes. The names of the replacement Files become links. These Files are attached to the CAD Document.



Replacing Other Files in a CAD Document

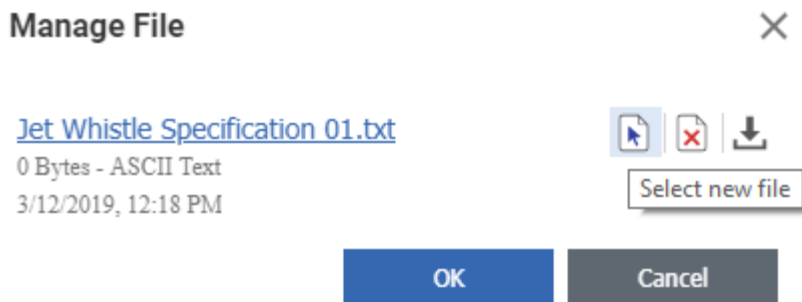
To replace additional Files in a CAD Document:



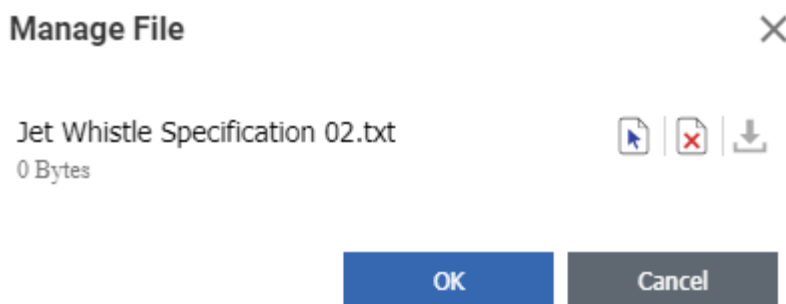
1. Open the CAD Document.
2. Go to the Files accordion tab.
3. Click the **Manage file property** button in the File Name cell.

^ Structure Parents Files Changes				
CADFiles ▼ ☆				
+ × Q × Hidden ▼ ⌂ ▼ 🌐 ▼				
Seque...	File Name [...]	File Type	Classification	Comments
1	📄 Jet Whistle Specification 01.txt	ASCII Text	Electronic/Physical/Documentation	This doc makes all clear

The **Manage File** dialog appears.



4. Click the **Select new file** button.
5. Search for and select the replacing File. In the Manage file dialog, the link with the name of the old File is replaced with the name of the new File.



6. Click **OK**. In the File Name cell, the link with the name of the old File is replaced with the name of the new File. The rest of the information on the old File is kept.

- Click **Save** or **Done** to save your changes. In the **File Name** cell, the name of the new File becomes a link to it. The Files are replaced, and the File Type is updated

Structure Parents Files Changes				
CADFiles ▾ ☆				
    Hidden ▾  ▾  ▾  ▾				
Seque...	File Name [...]	File Type	Classification	Comments
1	 Jet Whistle Specificati...	ASCII Text	Electronic/Physical/Documentation	This doc makes all clear

Removing Native and Viewable CAD Files from a CAD Document

To remove native and viewable CAD Files from a CAD Document:

- Open the CAD Document.
- Click **Edit**.
- Click the **Manage file property** button under Native file.

CAD Document

Document Number

MP0370c

Revision

A

State

Preliminary

Name

M3xNN Socket Cap Bolt

Type

Part

Authoring Tool

SolidWorks

Version

sw2014

Description

Assigned Creator

Innovator Admin

...

Designated User

Innovator Admin

...

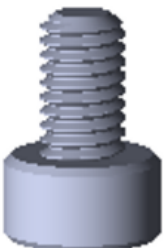
From Template

☐ Changes Pending

☐ Standard

☐ Template

Part



Native File

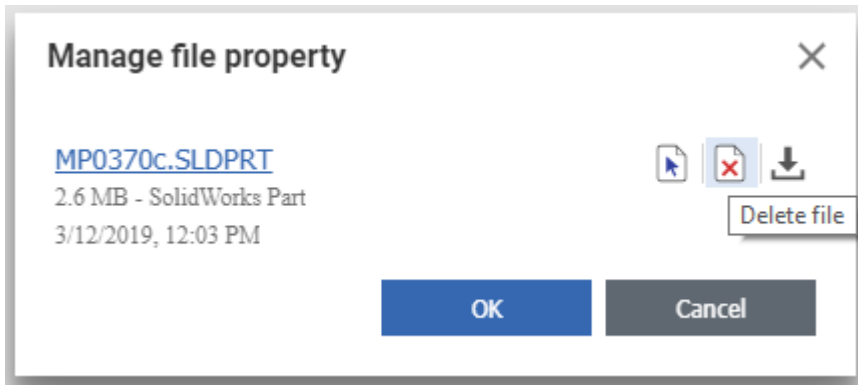
 MP0370.SLDPR

Viewable File

 [Select file...](#)

The **Manage file property** dialog appears.





4. Click the **Delete file** button. A notification dialog appears.

localhost says

Do you want to clear the file field?



5. Click **OK** in the notification dialog. The Select File link replaces the link to the native File.

Native File

 [Select file...](#)

Viewable File

 [Simple PDF C.pdf](#)

6. Click the **Manage file property** button under Viewable file. The Manage file property dialog appears.

Native File

 [Select file...](#)

Viewable File

 [Simple PDF C.pdf](#)

7. Click the **Delete file** button. A notification dialog appears.

8. Click **OK** in the notification dialog. The Select File link replaces the link to the viewable File.

Native File



Viewable File



9. Click **Save** or **Done**. The native and viewable Files are removed from the CAD Document.

CAD Document

Document Number

MP0370c

Revision

A

State

Preliminary

Name

M3xNN Socket Cap Bolt

Type

Part

Authoring Tool

SolidWorks

Version

sw2014

Description

Assigned Creator

Innovator Admin

Designated User

Innovator Admin

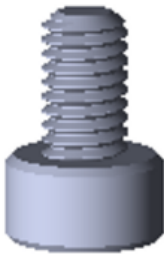
From Template

☐ Changes Pending

☐ Standard

☐ Template

Part



Native File

 [Select file...](#)

Viewable File

 [Select file...](#)

Removing Other Files from a CAD Document

To remove a File from a Document:

1. Open the CAD Document.
2. Click **Edit**.
3. Go to the **Files** accordion tab.
4. Click the **File** row and then click **Delete Row** on the **Files** accordion toolbar. The **File** becomes unavailable.

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^ Structure Parents Files Changes				
CADFiles ☆				
+ × Q × Hidden ⌵ ⌵ ⌵ ⌵				
Seque...	File Name [...]	File Type	Classification	Comments
1	 Jet Whistle Specificati...	ASCII Text	Electronic/Physical/Documentation	This doc makes all clear

5. Click **Save** or **Done** on the **CADDocument** toolbar. The File disappears from the grid.

Important

The File disappears immediately if the CAD Document was not saved after it was added.

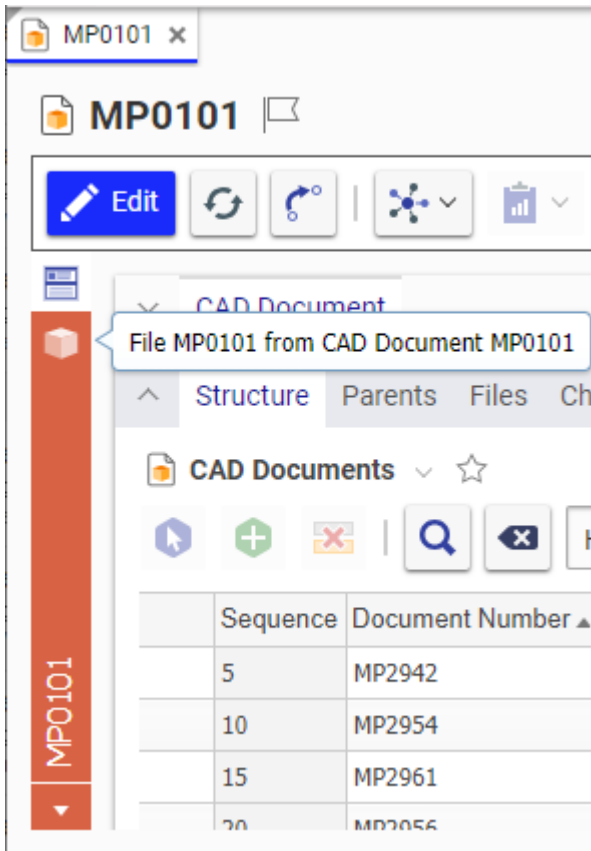
Working with CAD Files

If you have purchased a third-party CAD integration tool, you can use it to attach native CAD and viewable files to a Part using the CAD authoring tool. This subscription also enables you to view and work with CAD File representations in Aras Innovator directly from the corresponding CAD Document.

Accessing CAD Models from CAD Documents

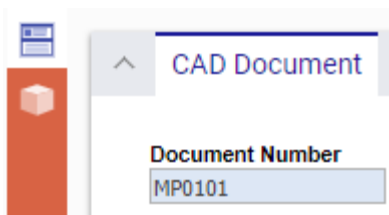
Once the integration license is obtained, and files are imported into Aras Innovator, the CAD Document displays the Sidebar viewer icon on its left side.



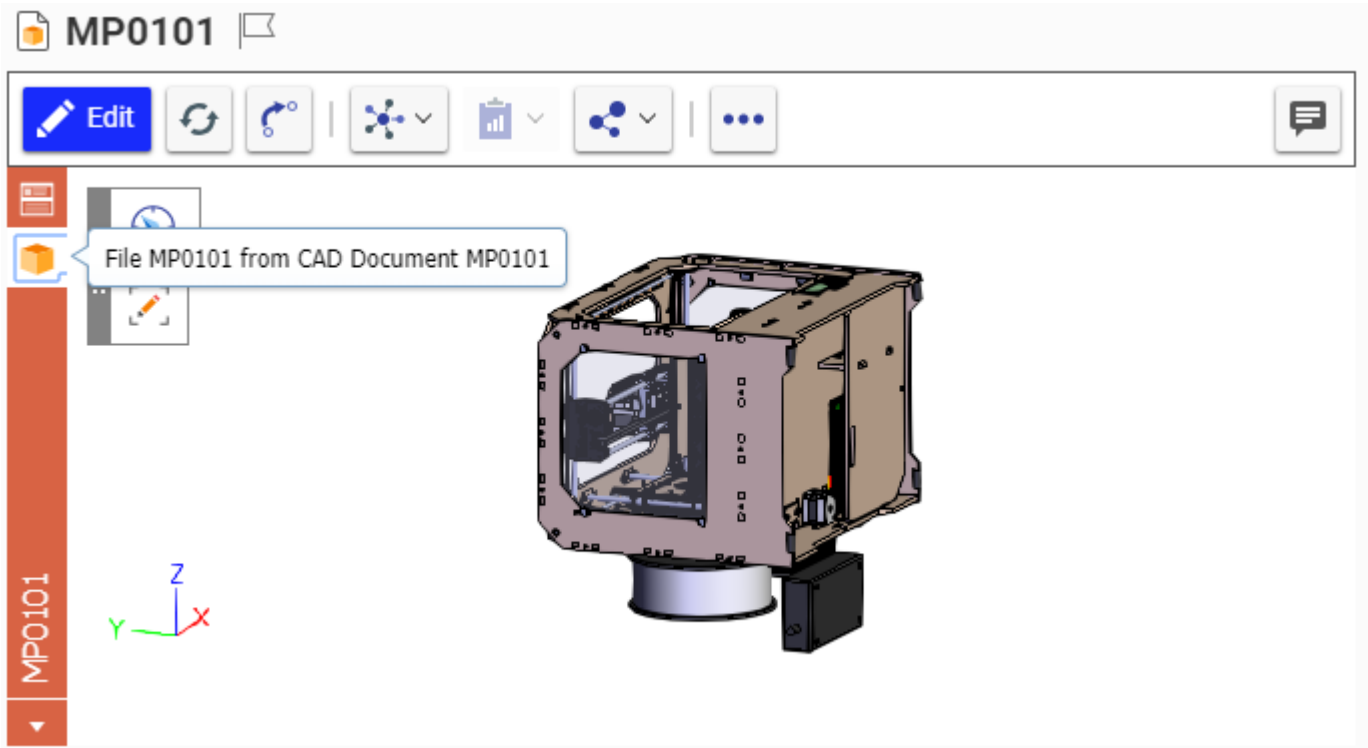


The Sidebar hosts tabs that provide access to tools for viewing and working with CAD Models, PDF files and images attached to the CAD Document. The Sidebar contents depend on your license, CAD authoring tool, CAD and other Files attached to a CAD Document. The most used tabs are as follows:

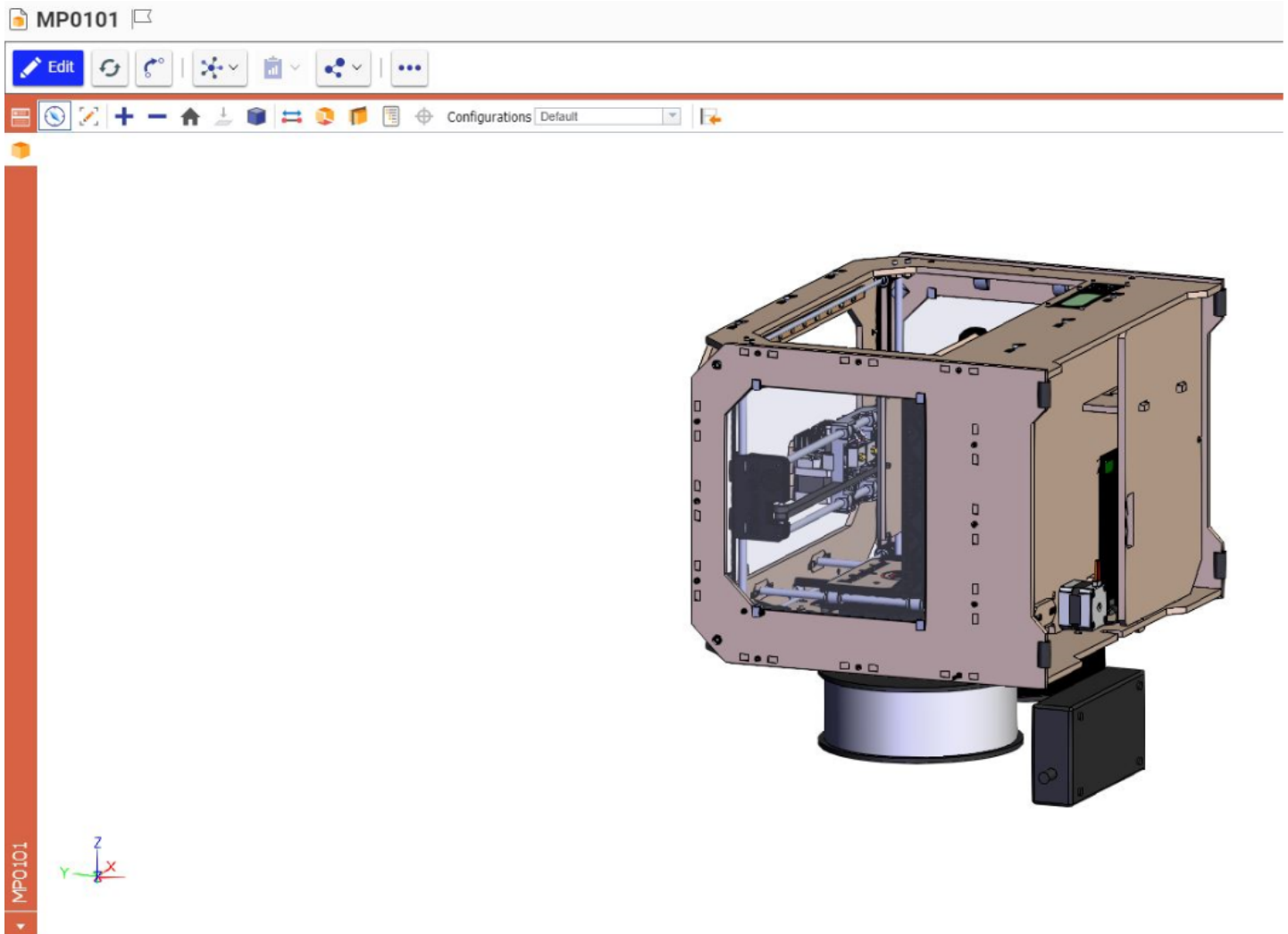
- **Form** shows the CAD Document view.



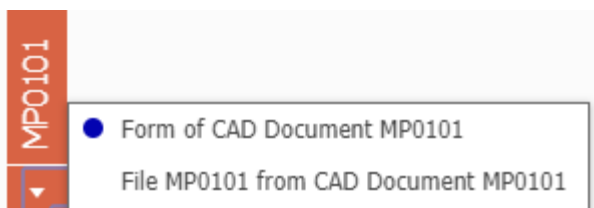
- **Monolithic Viewer** is a simple tool for viewing and working with 3D CAD models.



- **PDF Viewer** displays the PDF file.

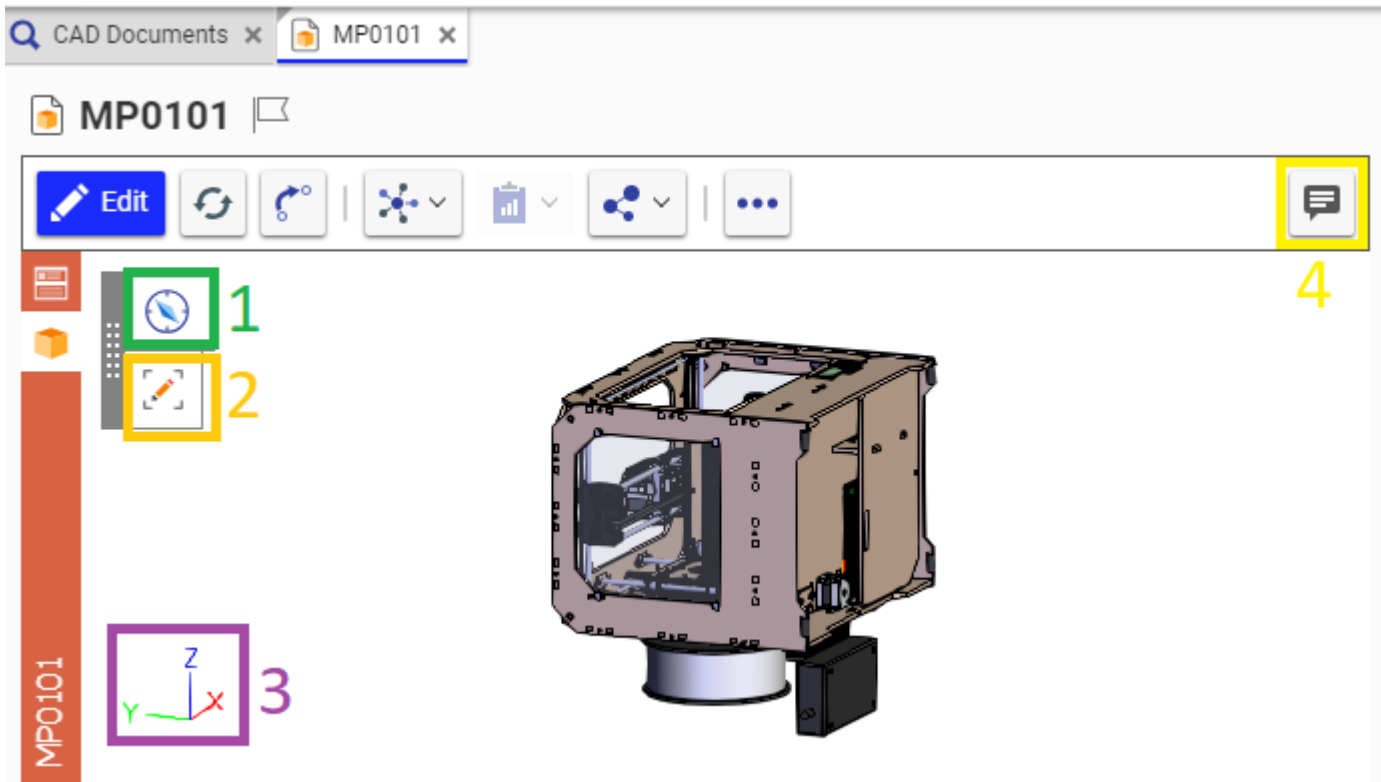


Alternatively, you can view the list of all possible navigation options within the sidebar by selecting the arrow at the bottom of the sidebar and making your selection for the viewer you wish to view. This list includes the CAD Document Form view. It is possible to view Files attached to the CAD Document. The blue circle marks the currently selected viewer.



Viewing CAD Models

When the viewer is selected, the CAD Model appears as follows:



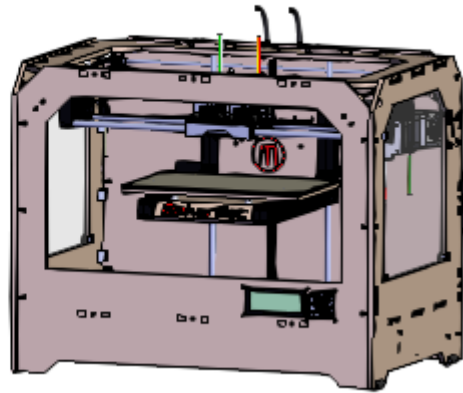
The view includes the following functionality:

1. The **View** toolbar button
2. The **Markup** toolbar button
3. The **Model Orientation** indicator
4. The **Discussion** button

Important

As the **Discussion** button is on the CAD Document toolbar, it can be accessed from anywhere in the CAD Document. However, it is most convenient to use it from the CAD Files view because you can add snapshots of the CAD Model.

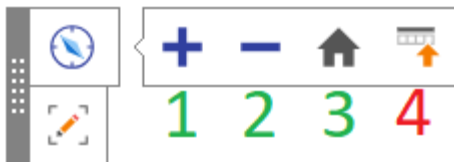
You can view a CAD Model from different sides by clicking and dragging at any place on the Model canvas. The **Model Orientation** indicator tells you which side is toward you and where the other sides are.



Use the Viewing toolbar and Model context menu for advanced viewing.

Using the Viewing Toolbars

Click the **View** toolbar button to launch the viewing mode and to access the Basic Viewing toolbar:



1. **Zoom Up** increases the CAD Model size on the screen.
2. **Zoom Down** decreases the CAD Model size on the screen.
3. **Reset View** sets the default CAD Model orientation and size on the screen.

4. **Switch To Standard Toolbar** shows the **StandardViewing** toolbar.

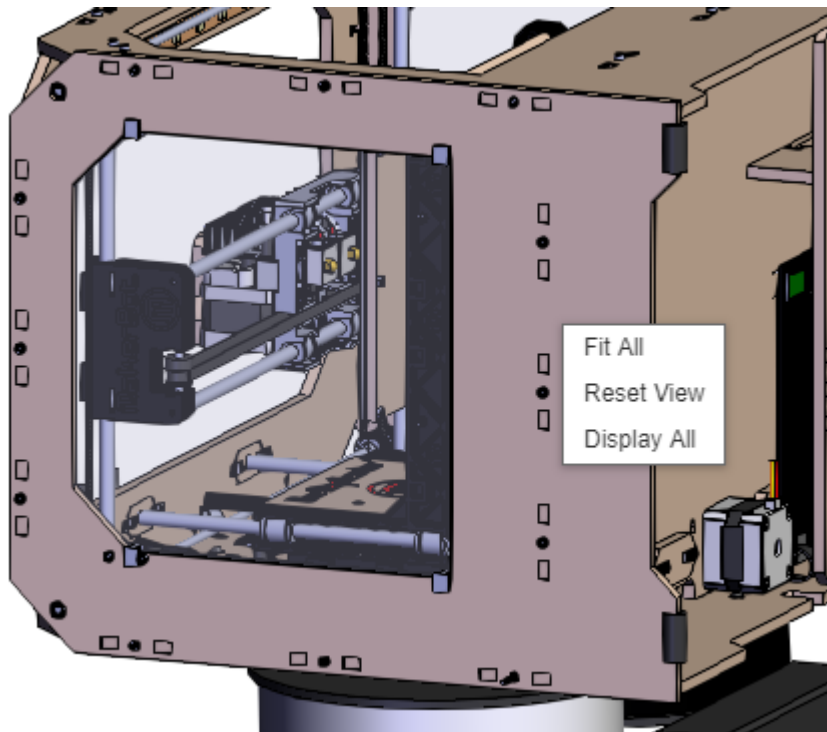
The **StandardViewing** toolbar includes the same buttons with the exception of the **Switch To Standard Toolbar** button. The **Switch To BasicToolbar** button appears instead. There are additional features on the **StandardViewing** toolbar:



5. **Orient to Face** shows the CAD Model oriented to you with the surface (part) selected.
6. **Set Display Style** shows/hides a toolbar with options on how to display the CAD Model.
7. **Measure** shows/hides a toolbar with options for measuring the CAD Model.
8. **Exploded View** shows/hides the toolbar with the exploding slider.
9. **Cross Section** shows/hides a toolbar with options for cross-section viewing of the CAD Model.
10. **Model Browser** shows/hides viewing options as trees.
11. **Product Manufacturer Information** displays annotations and attributes contained in a 3D solid model that complement the geometric definition and complete the digital data set.
12. **Configurations** is the list of configurations available within the CAD Model.
13. **Switch to Basic Toolbar** shows the **Basic Viewing** toolbar.

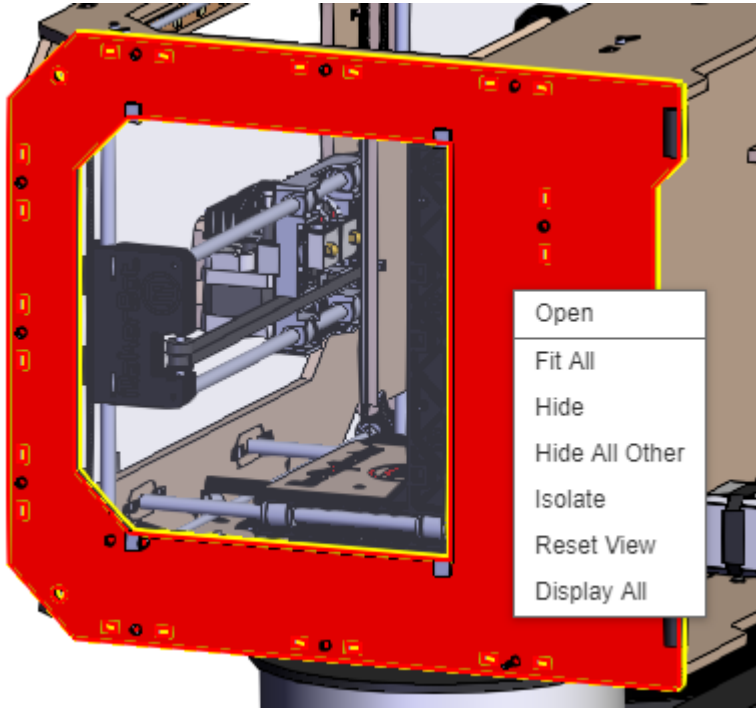
Using the CAD Model Context menus

When viewing a CAD Model, **right-click** the CAD Model to access its context menu:



- **Fit All** sets the CAD Model size so that all parts are shown on the screen.
- **Reset View** sets the default CAD Model orientation and size on the screen.
- **Display All** shows all the Model parts.

Click an individual part to select it and then right-click to access the part context menu:



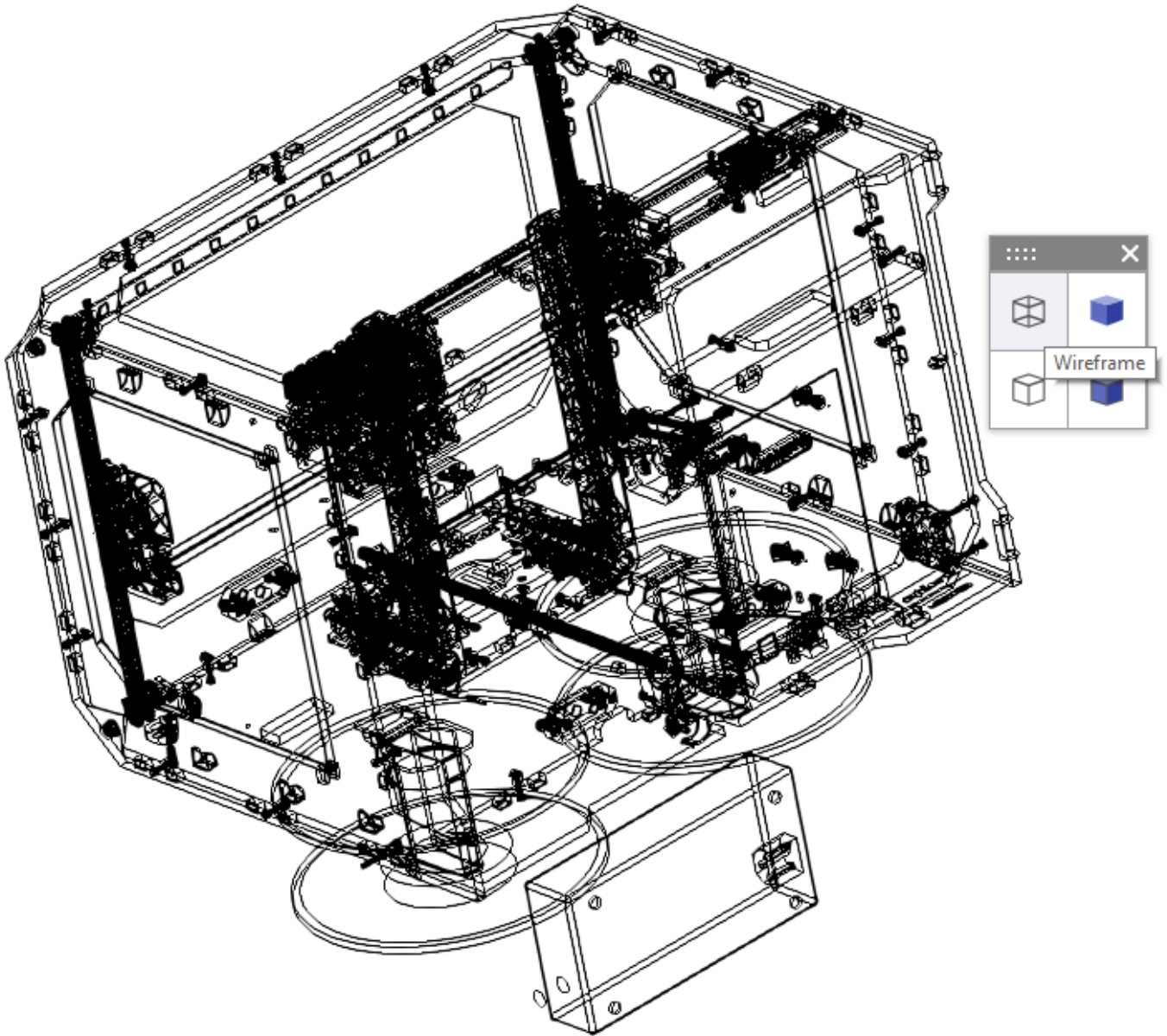
- **Open** opens the CAD Document view of the selected part.
- **Fit All** sets the CAD Model size so that all parts are shown on the screen.
- **Hide** hides the selected part from showing on the screen.
- **Hide All Other** hides everything appearing on the screen except the selected part.
- **Isolate** makes everything transparent except the selected part.
- **Reset View** sets the default CAD Model orientation and size on the screen.
- **Display All** shows all the Model parts.

Setting the CAD Model Display Style

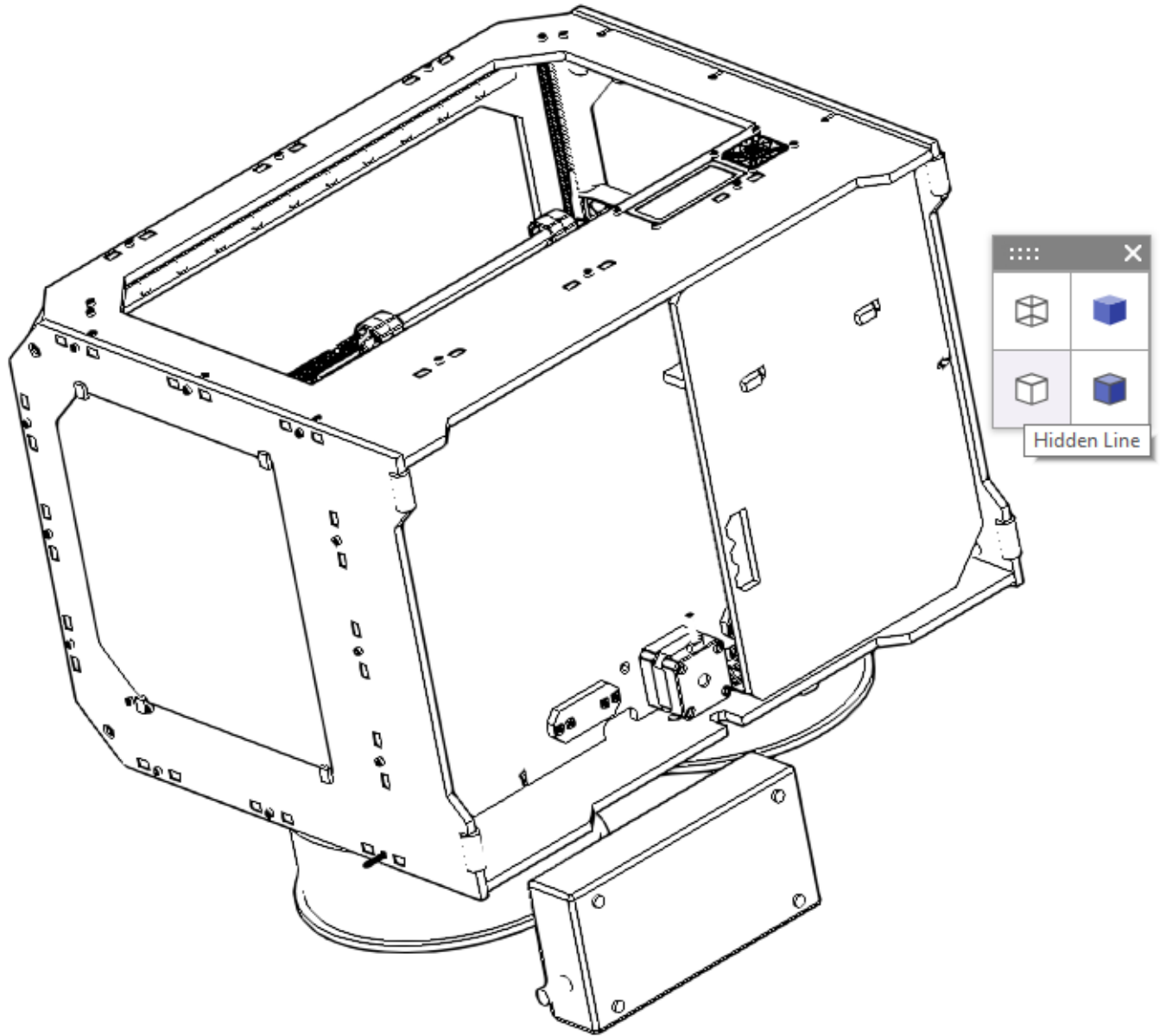
The **Display Style** toolbar provides the following display options for the CAD Model. Refer to section Using the Viewing Toolbars to access the button.



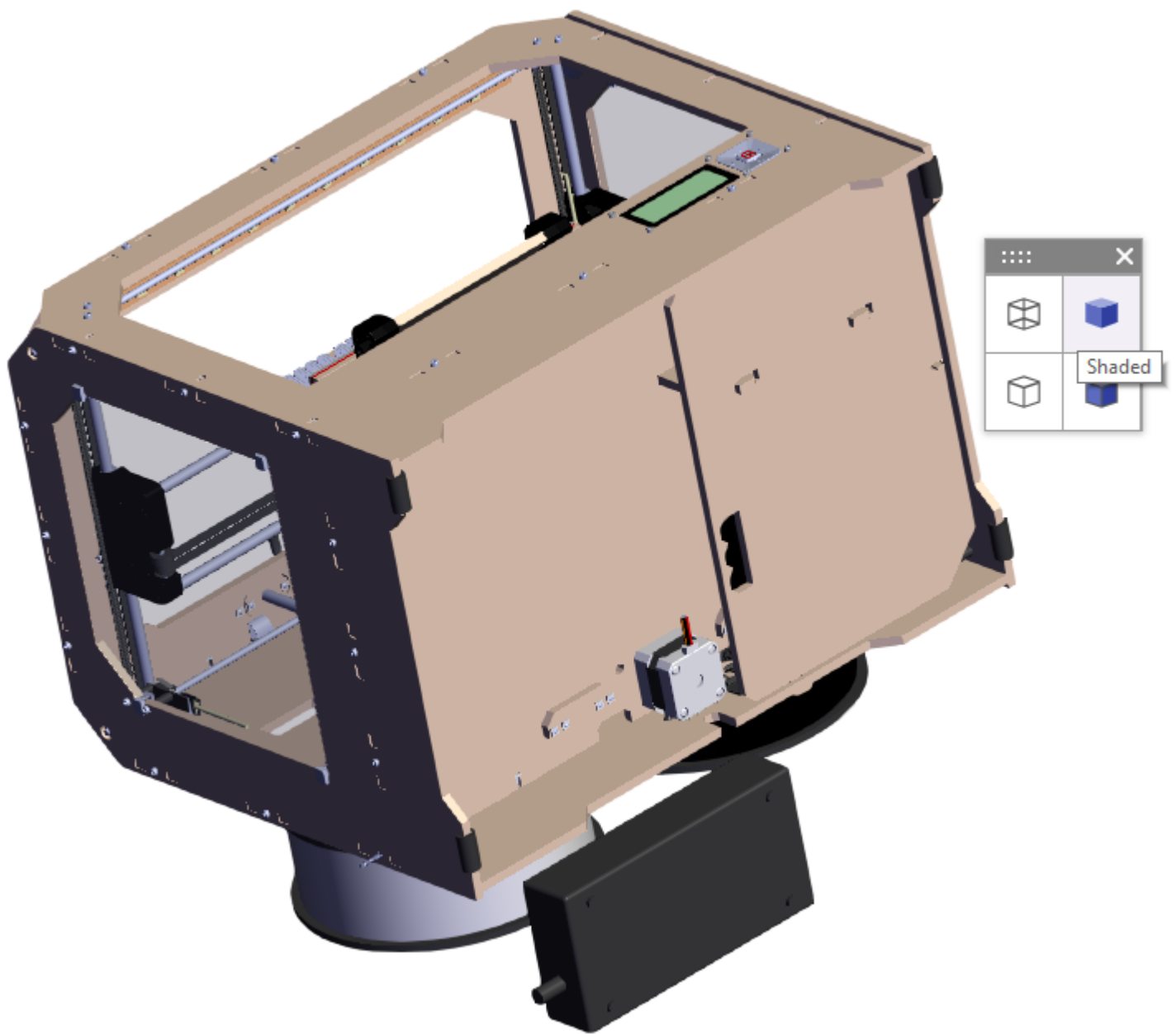
1. **Wireframe** displays wireframes of the CAD Model assembly and all its parts. Surfaces are transparent.



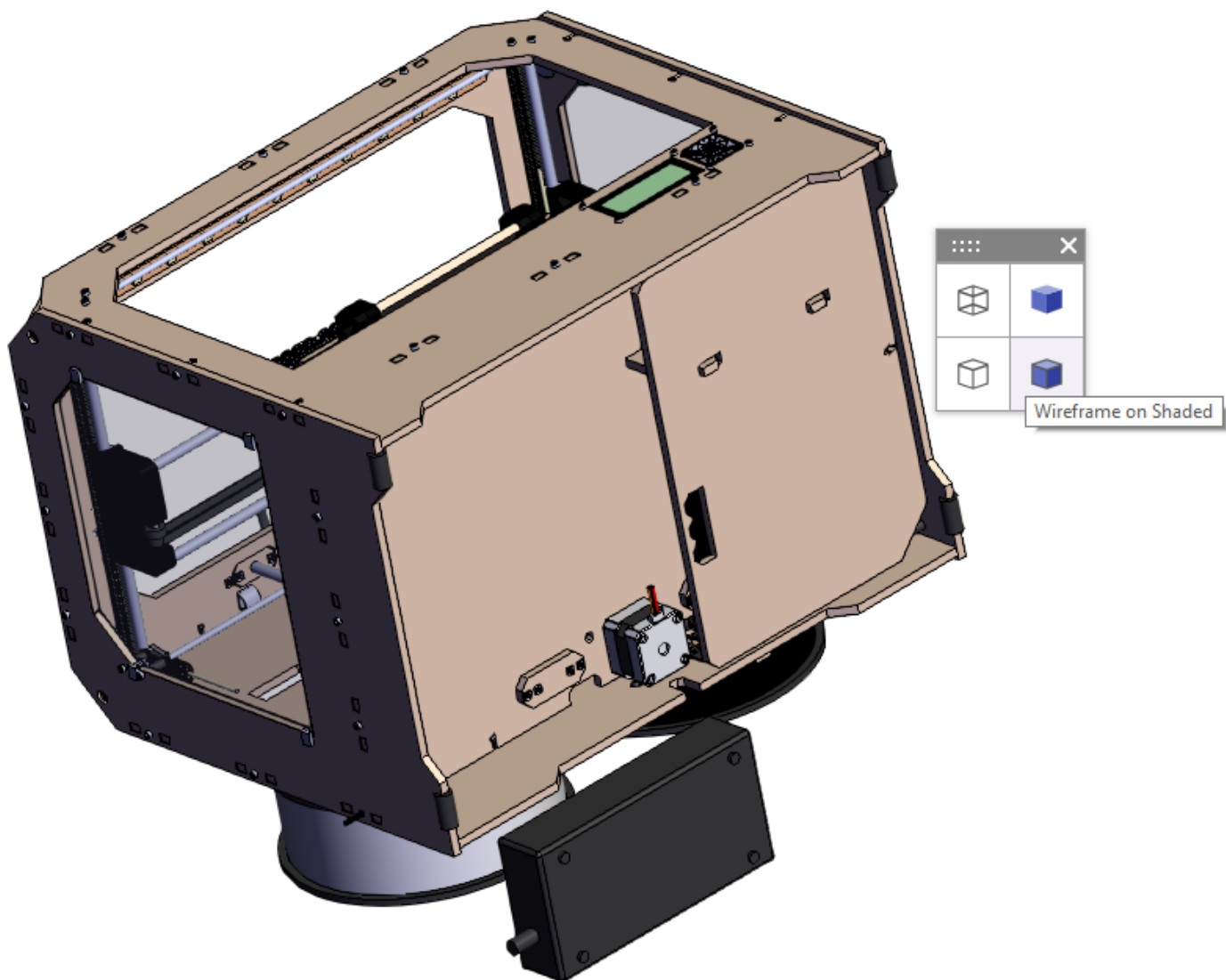
2. **Hidden Line** displays the white surfaces and black edges of the CAD Model assembly.



3. **Shaded** displays the CAD Model assembly surfaces in color.

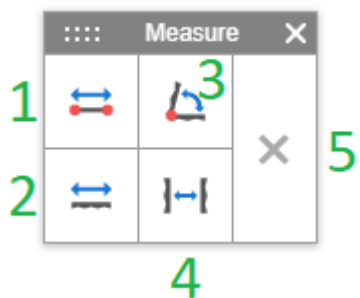


4. **Wireframe on Shaded** displays the CAD Model assembly with both wireframes and colored surfaces. This is the default display style.

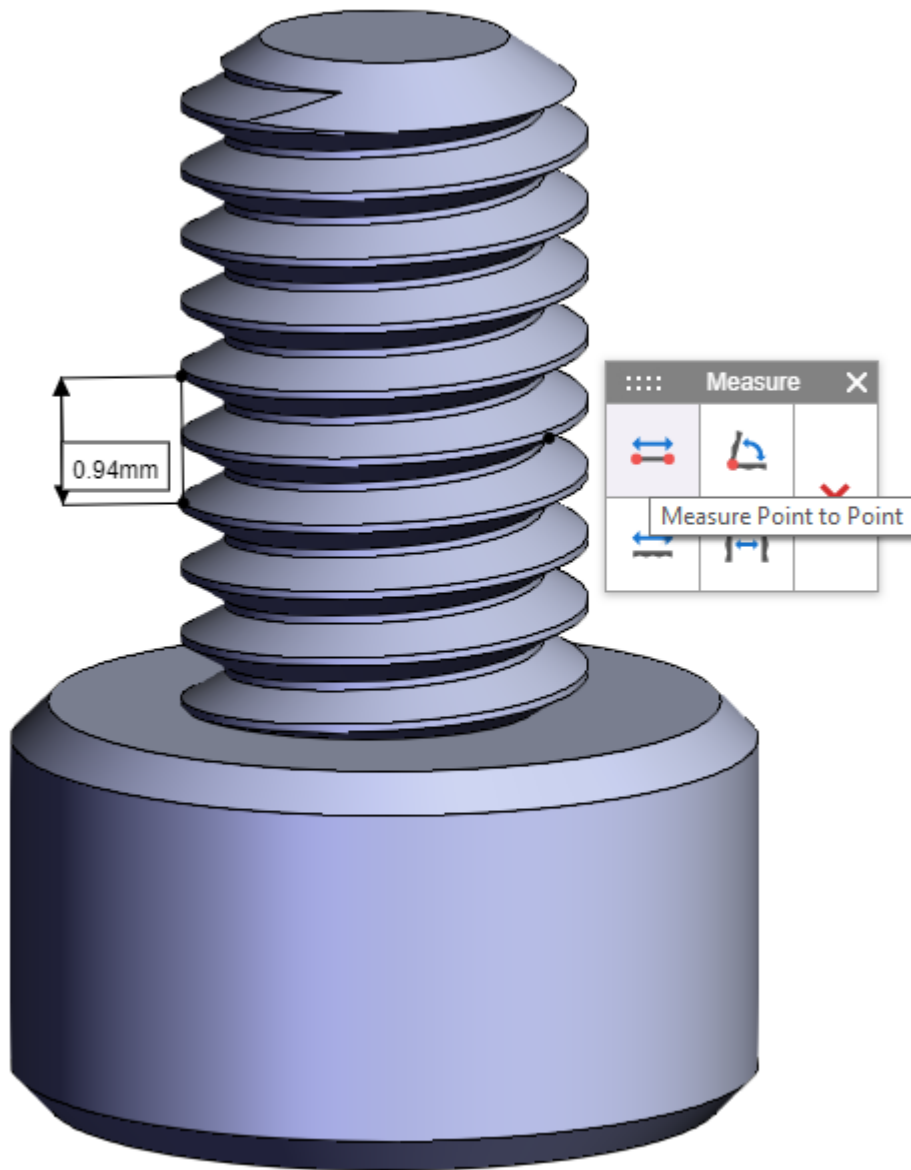


Measuring CAD Models

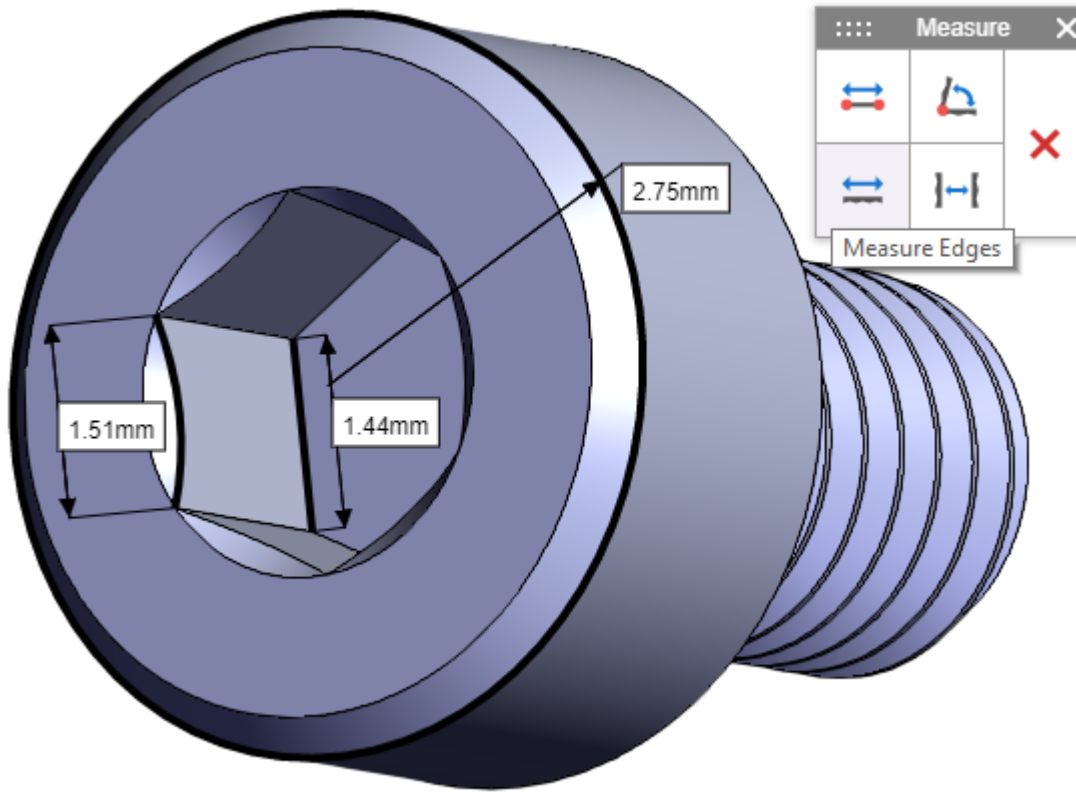
The **Measure** toolbar enables you to specify the type of measurement to use for the CAD Model. Measurements are displayed in the CAD Model authored units. Refer to section Using the Viewing Toolbars to access the button.



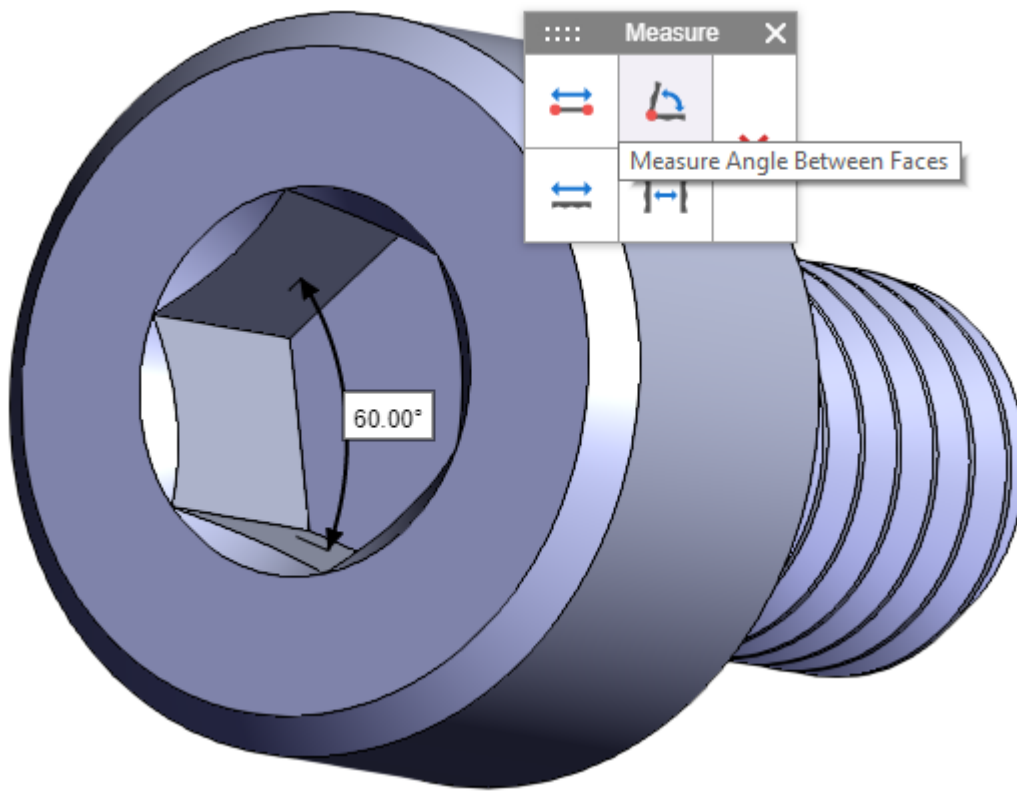
1. **Measure Point to Point** shows the distance between two arbitrary points. Click this button and then click the CAD Model to set these points and measure the distance between them.



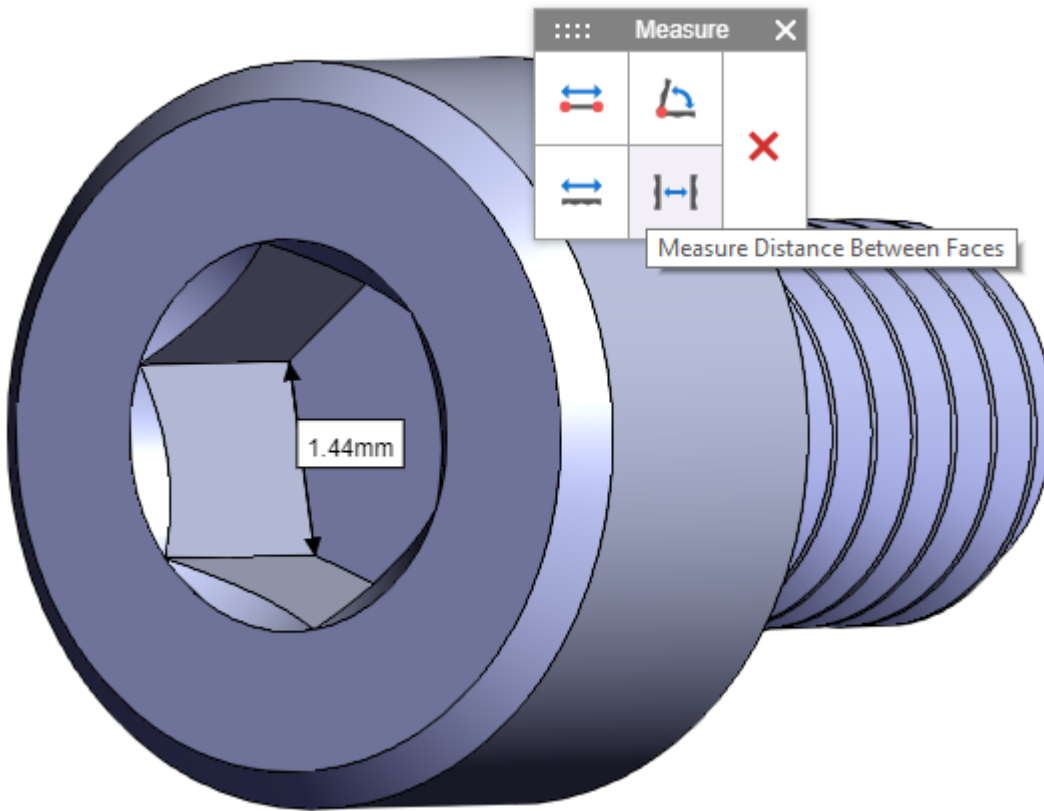
2. **Measure Edges** shows the length or radius of an arbitrary edge depending on the edge type. Click this button and then click an edge to measure it. The measured edges are bolded.



3. **Measure Angle Between Faces** shows the angle in grades between two arbitrary surfaces of the CAD Model assembly. Click this button and then click the appropriate surfaces to measure them.



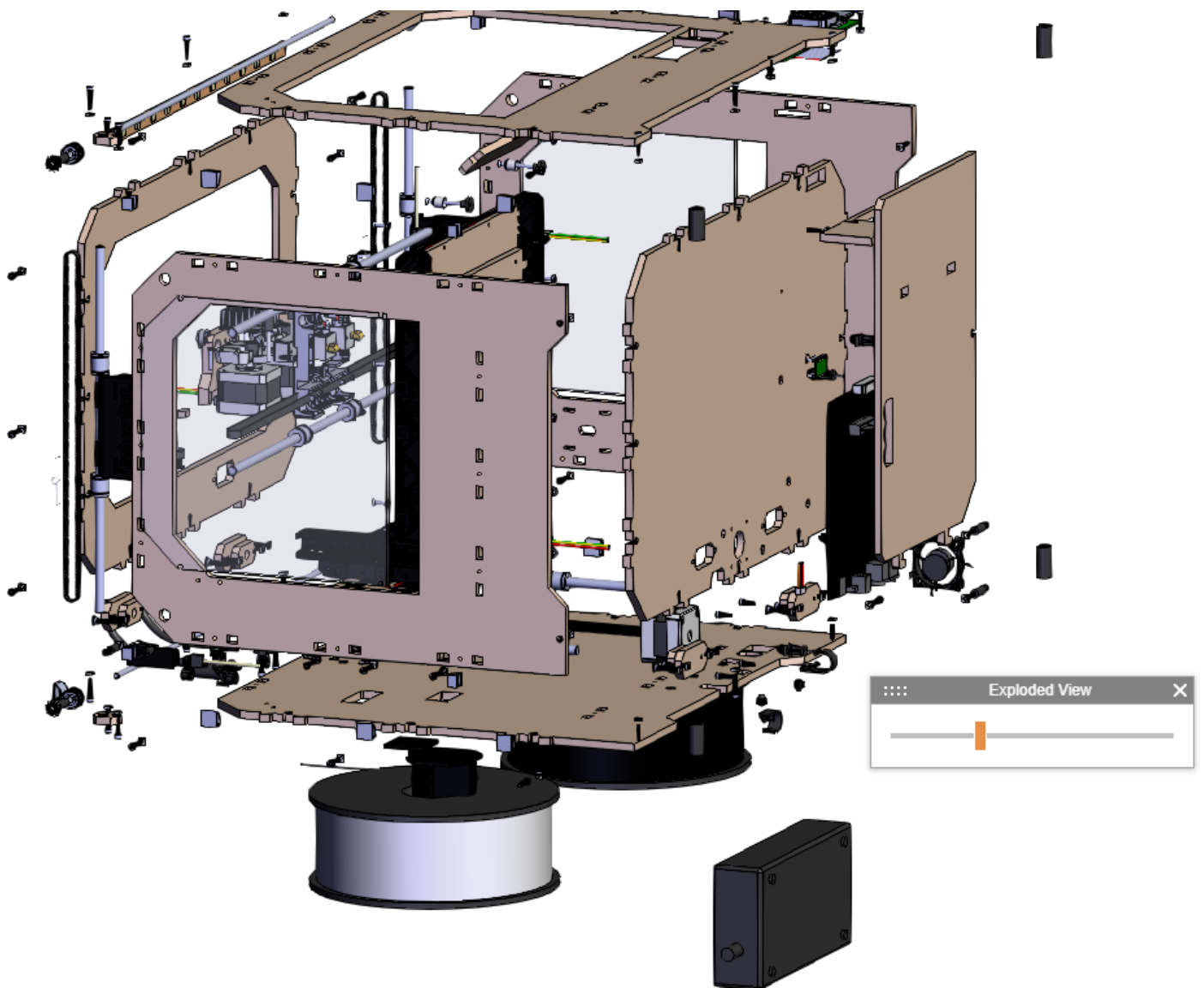
4. **Measure Distance Between Faces** shows the distance between two arbitrary surfaces of the CAD Model assembly. Click this button and then click the appropriate surfaces to measure the distance between them.



5. Click **Delete All** to clear all measurements from the CAD Model.

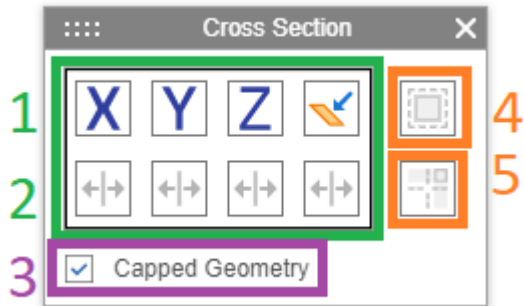
Exploding CAD Models

The **Exploded View** toolbar enables you to view assemblies as a set of separated parts to be fitted. Drag the **slider**. As you move it to the right, the more separated the parts become. Refer to section Using the Viewing Toolbars to access the button. You can use other viewing and markup features, like measure or labels, in the exploded view. To quit the exploded view, you can click the **Reset View** button on the viewing toolbar or context menu.

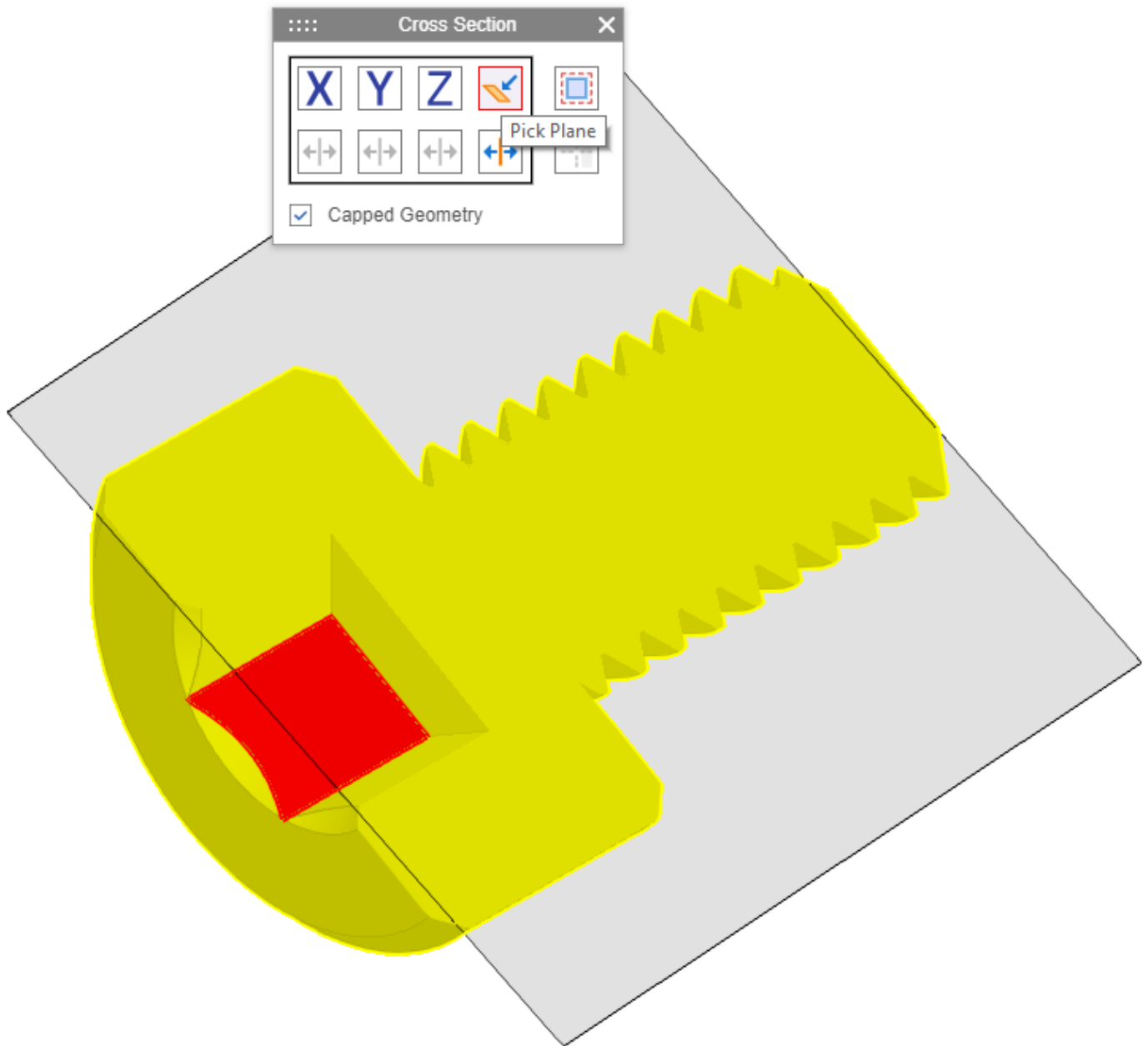


Cross Section Viewing of the CAD Model

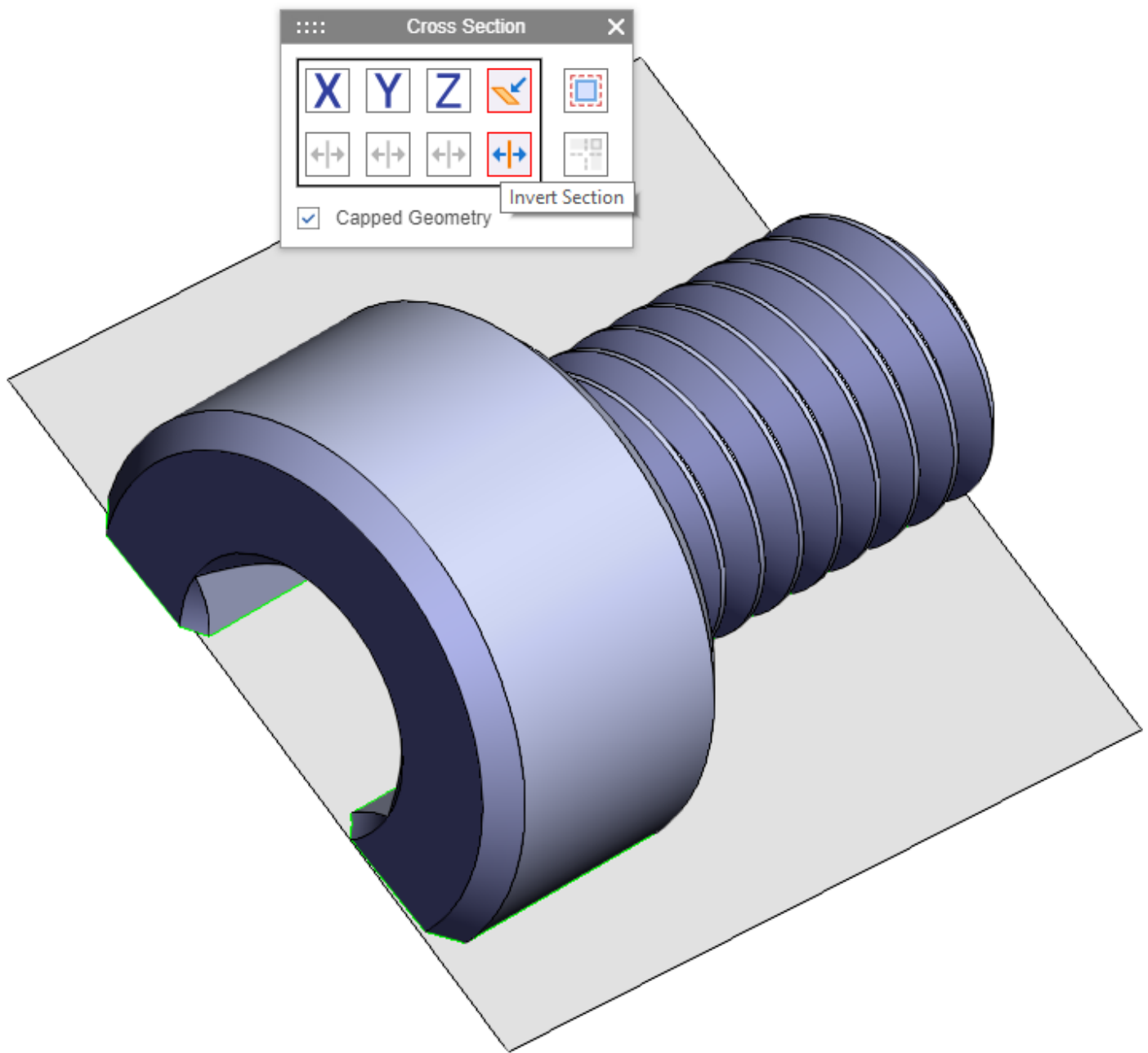
The **Cross Section** toolbar enables you to view the CAD Model in sections providing the following features. Refer to section Using the Viewing Toolbars to access the button.



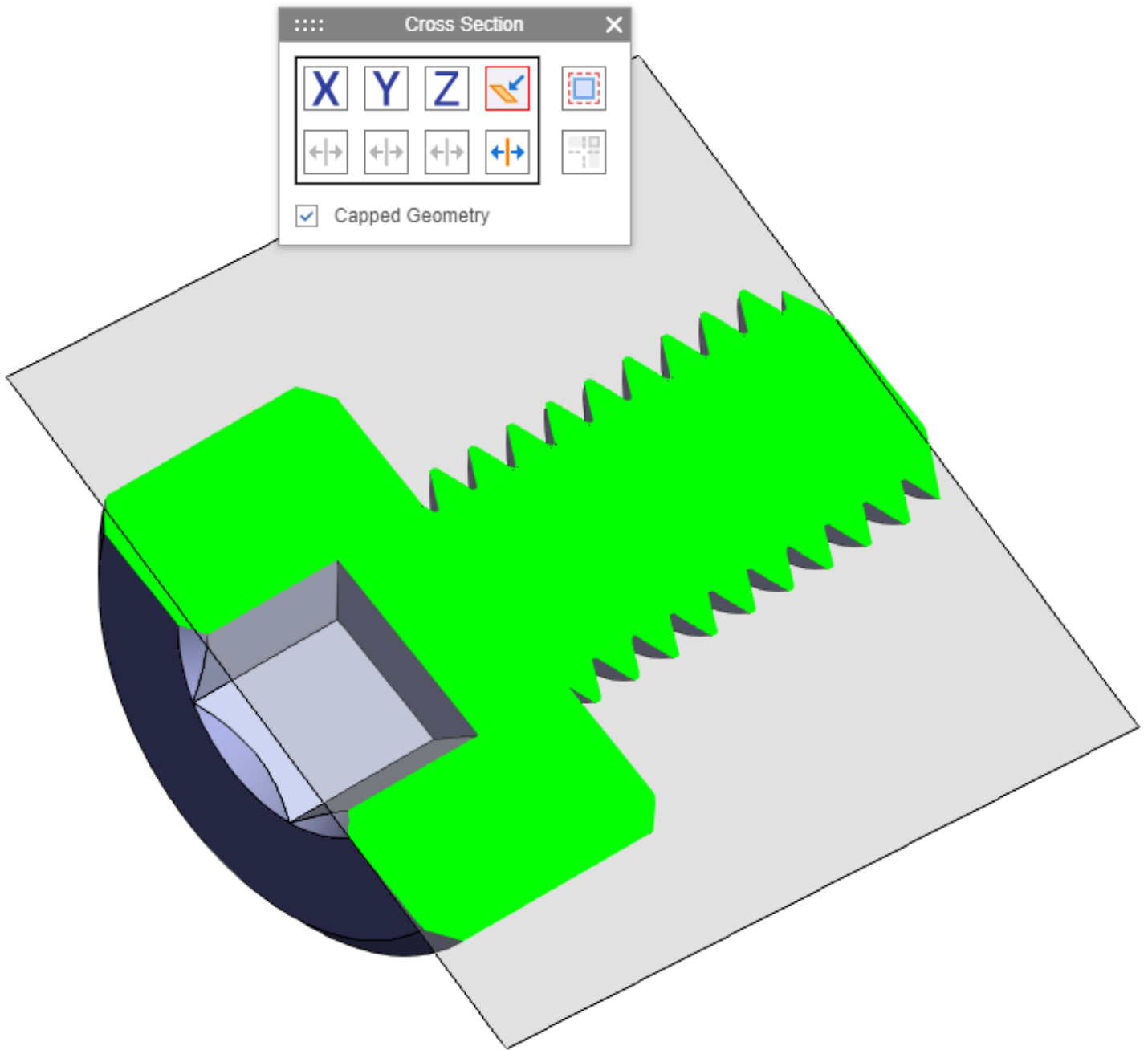
1. Use the **set of plane buttons** to specify cutting planes for the CAD Model. The **X**, **Y**, and **Z** buttons set the cutting planes according to the Model coordinate system. The **Pick Plane** button sets an arbitrary cutting plane: click a surface and then click this button. To cut the CAD Model in sections, drag the cutting planes.



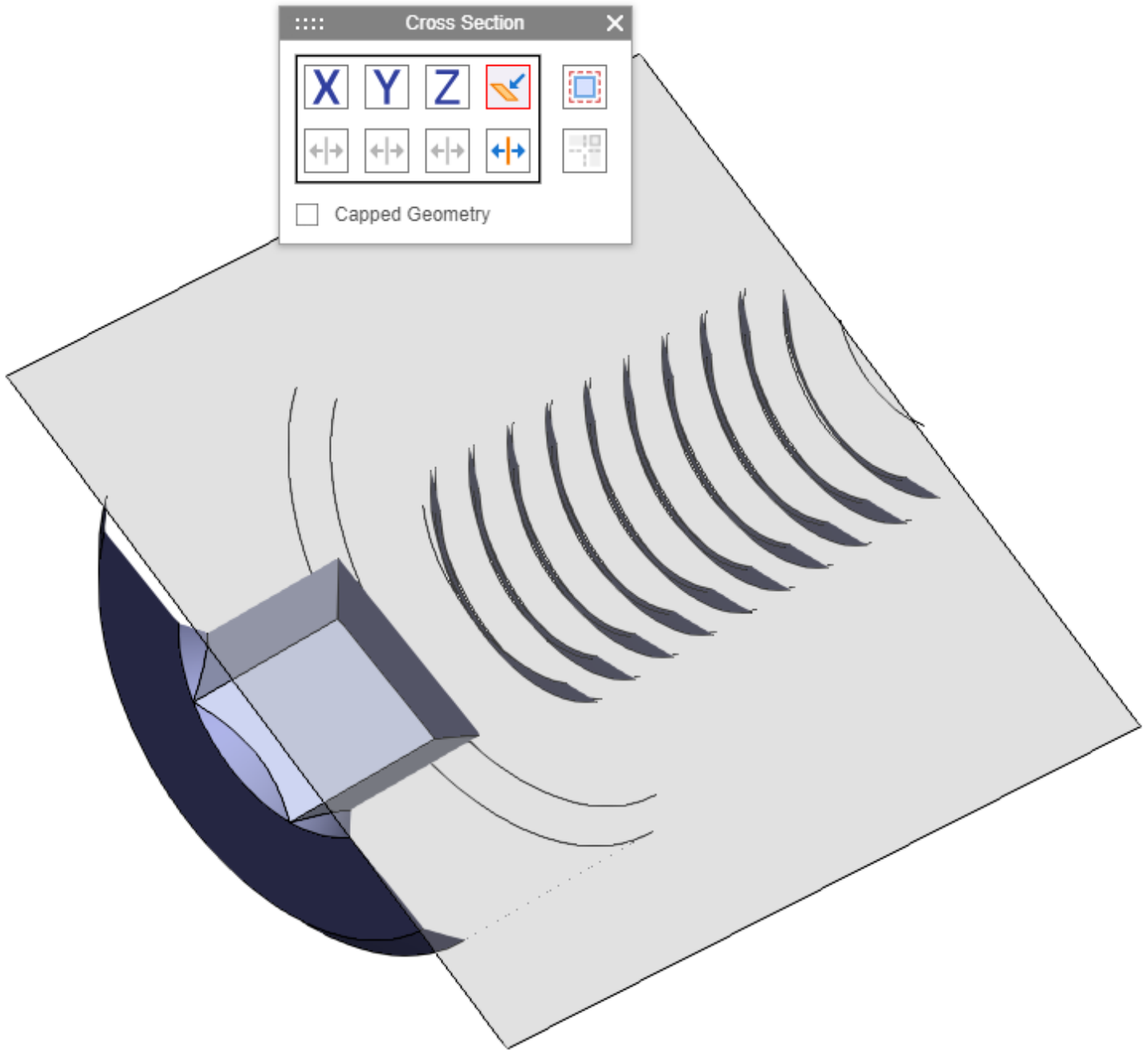
2. Each **plane** button includes an **Invert Section** button. Click this button to determine which of the cut sections is visible.



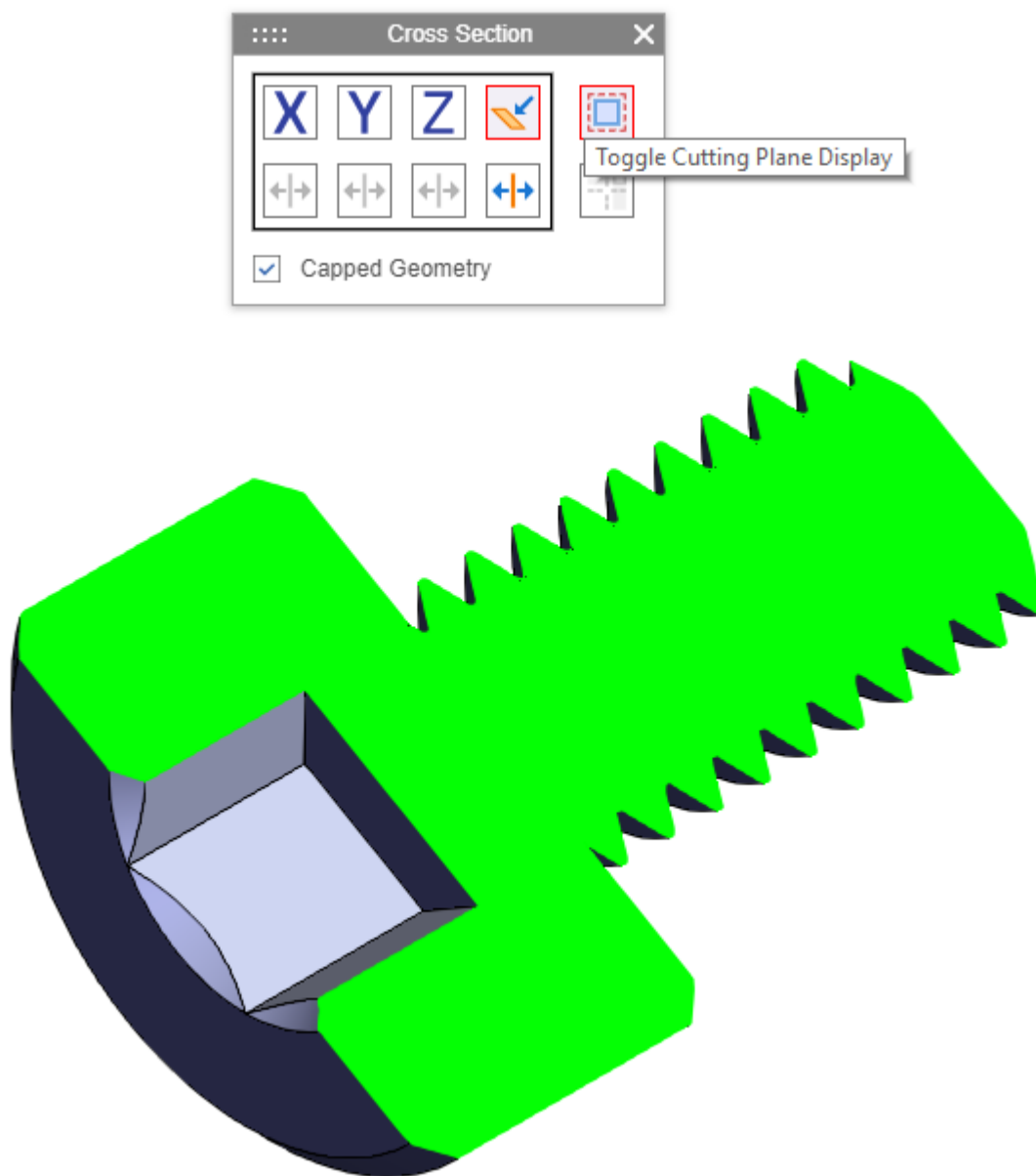
3. Click the **Capped Geometry** check box to display the cut section in green.



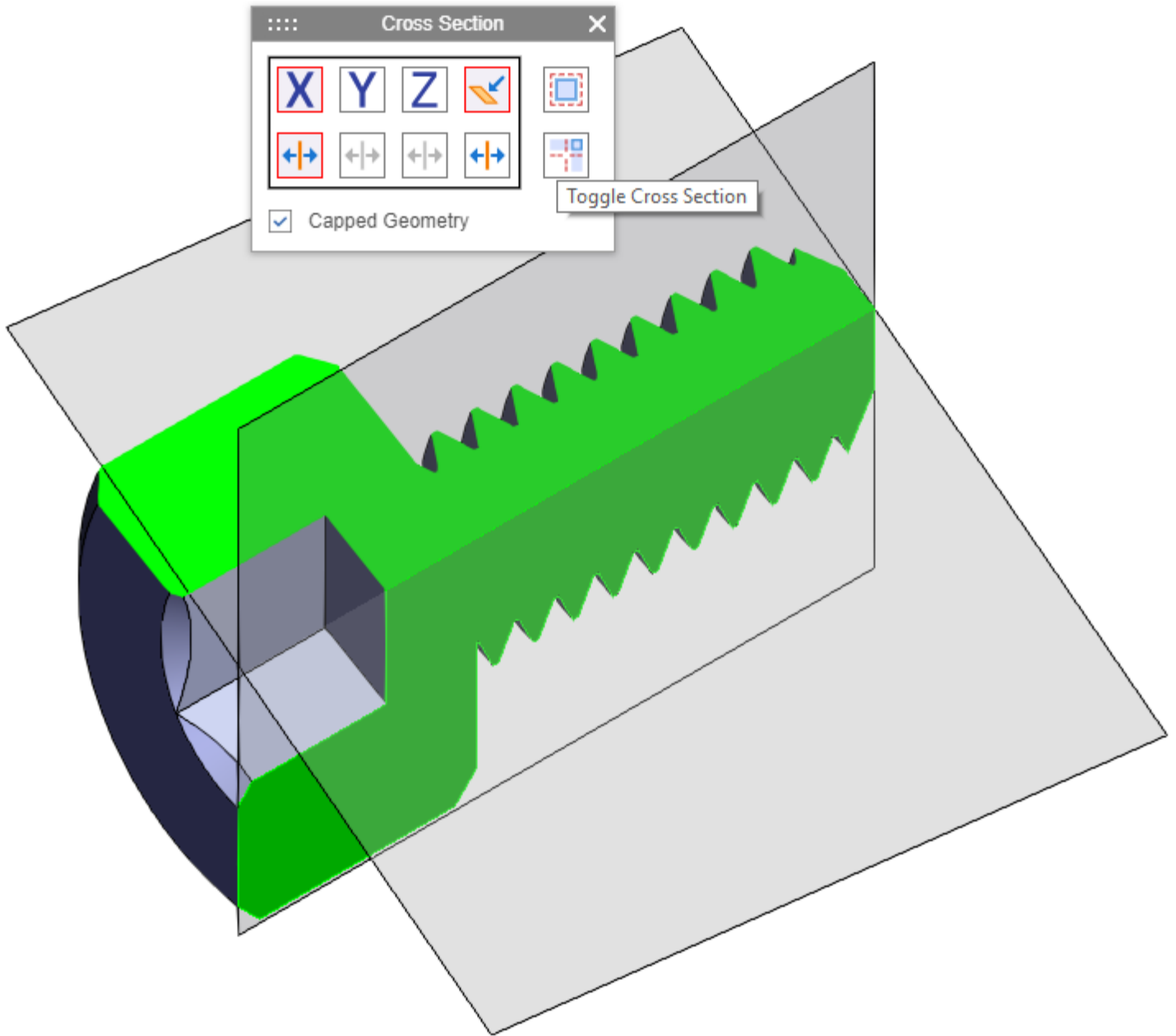
If you do not select the checkbox, the cut section is hollow.



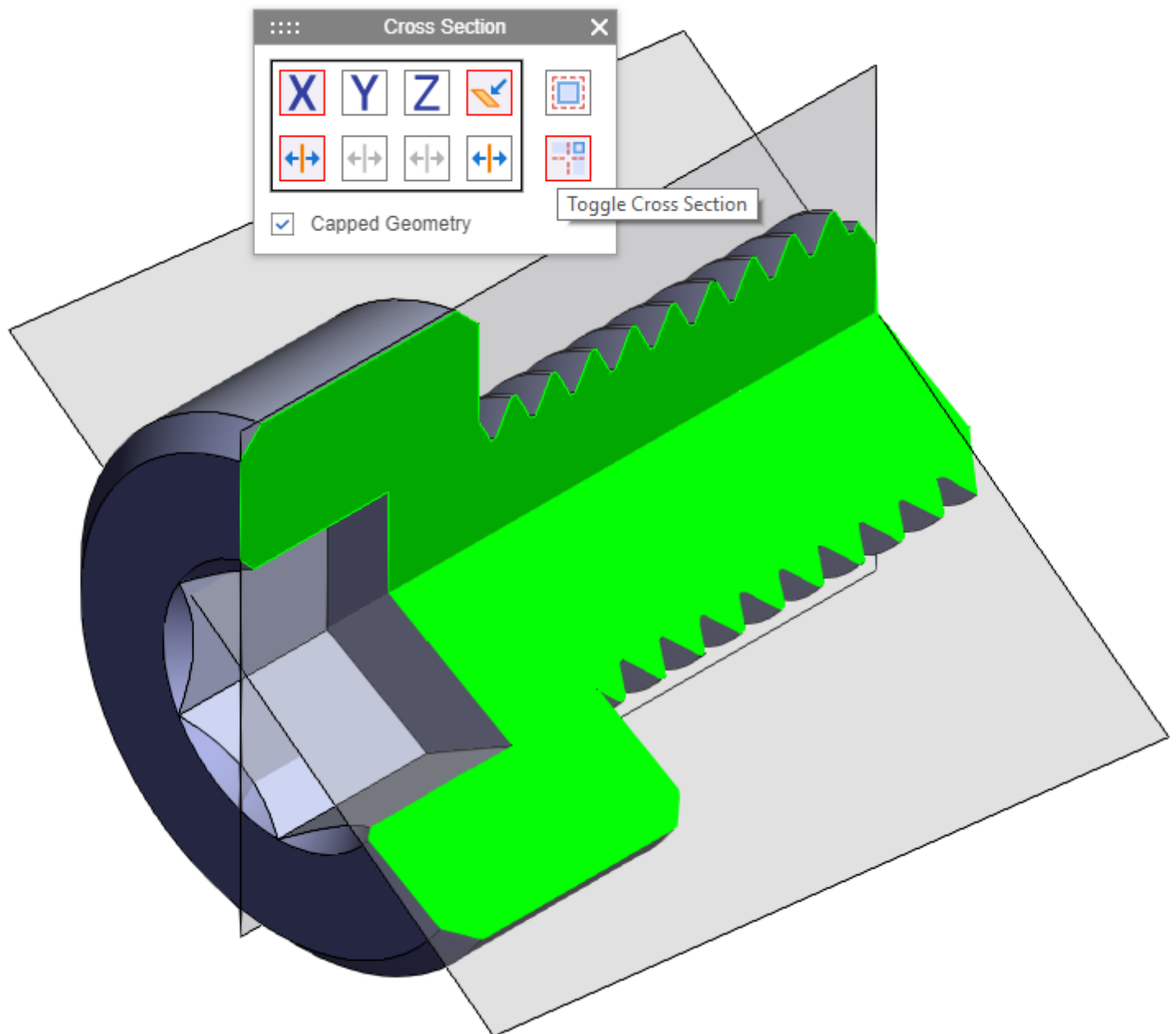
4. Click the **Toggle Cutting Plane Display** button to hide/show the cutting planes.



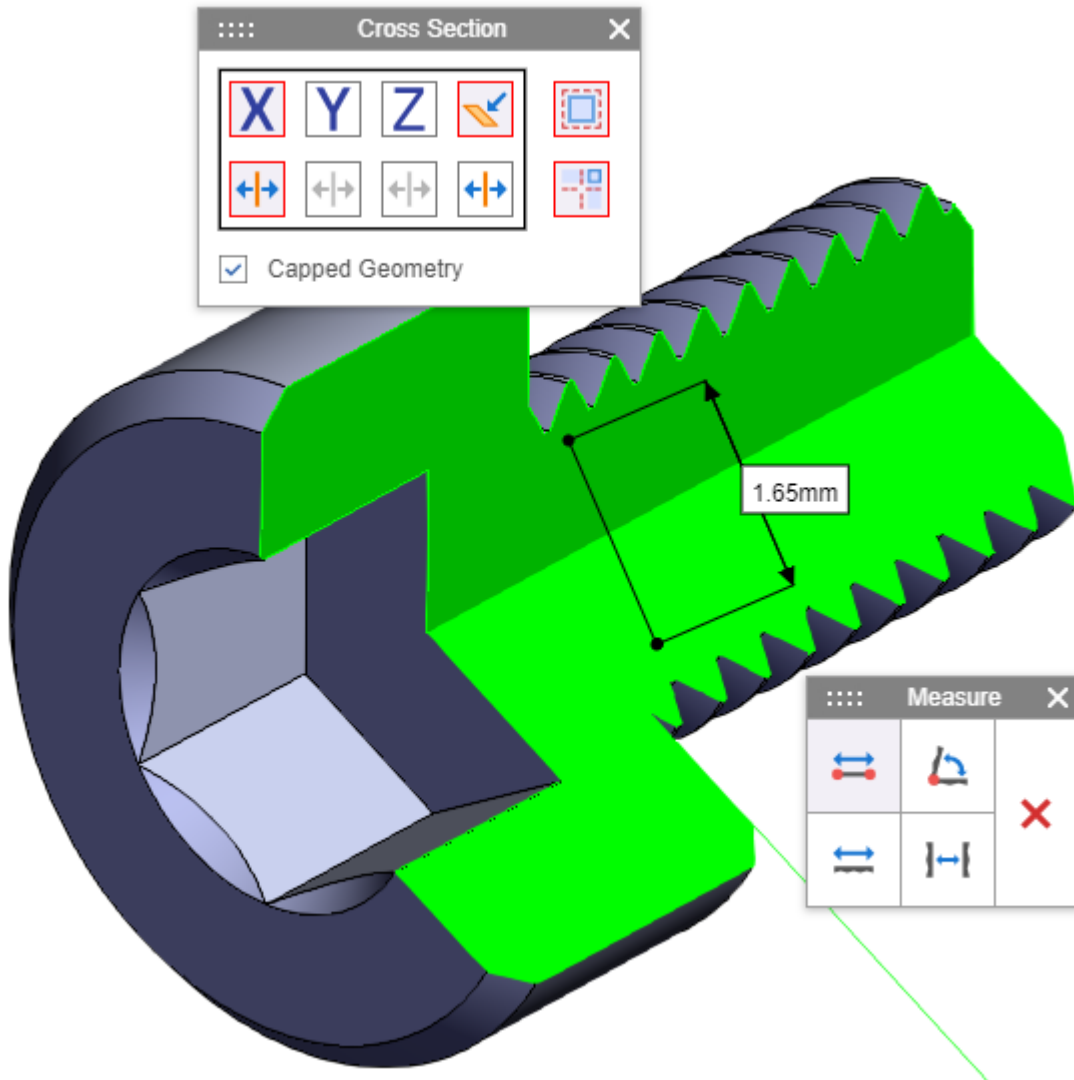
5. When using several cutting planes, the **Toggle Cross Section** button becomes available, enabling you to select which sides of the planes can cut.



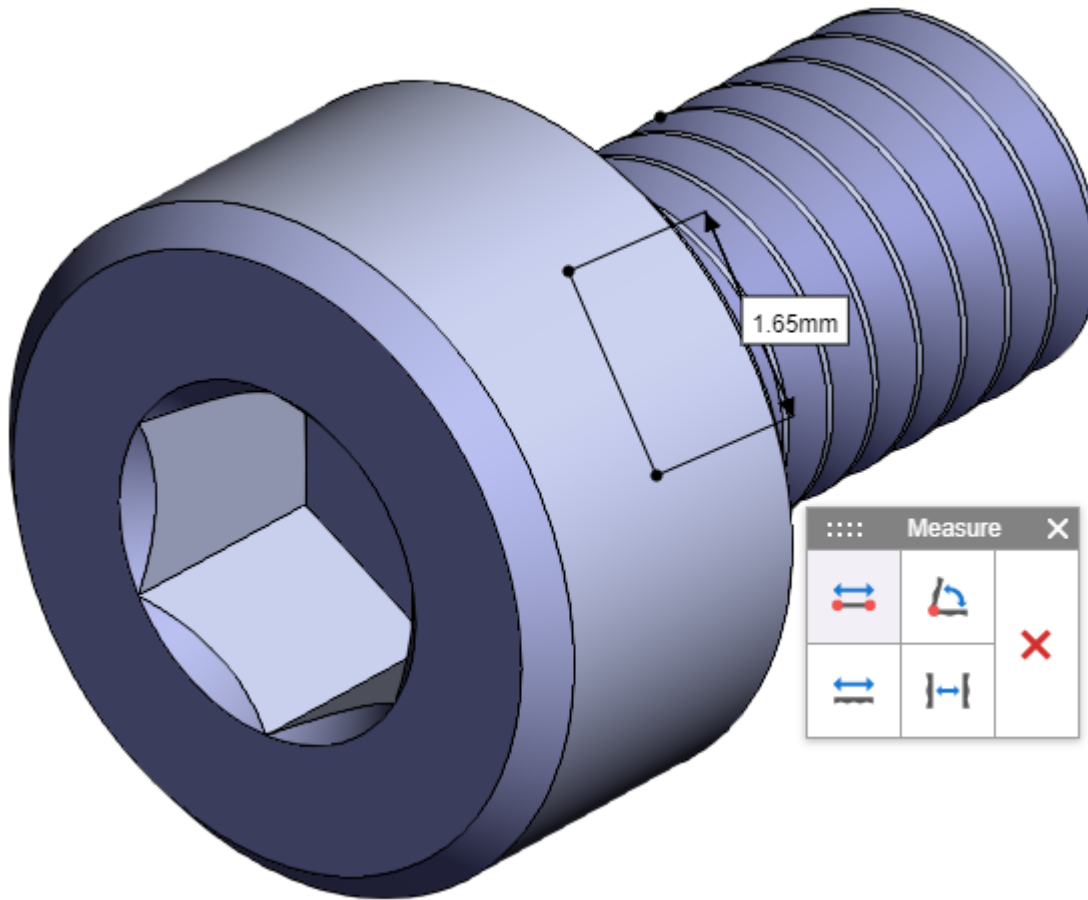
6. Click the **Toggle Cross Section** button to toggle the cutting sides of the planes. You can combine this button with the Invert Section buttons of these planes.



To enable other viewing and markup functionality in the exploded view, hide the cutting planes.

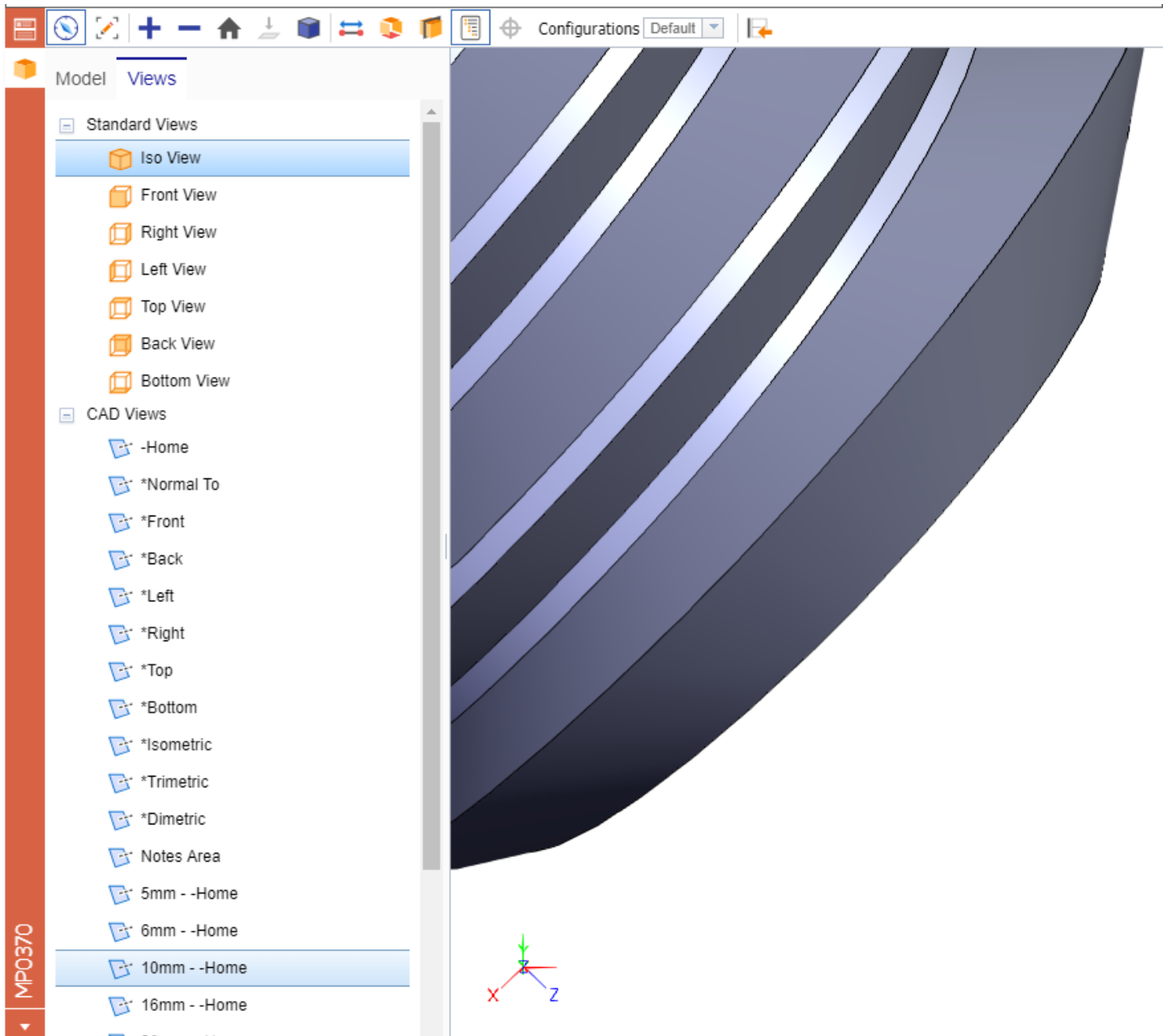


To quit the cross-section view of a Model, close the **Cross Section** toolbar.

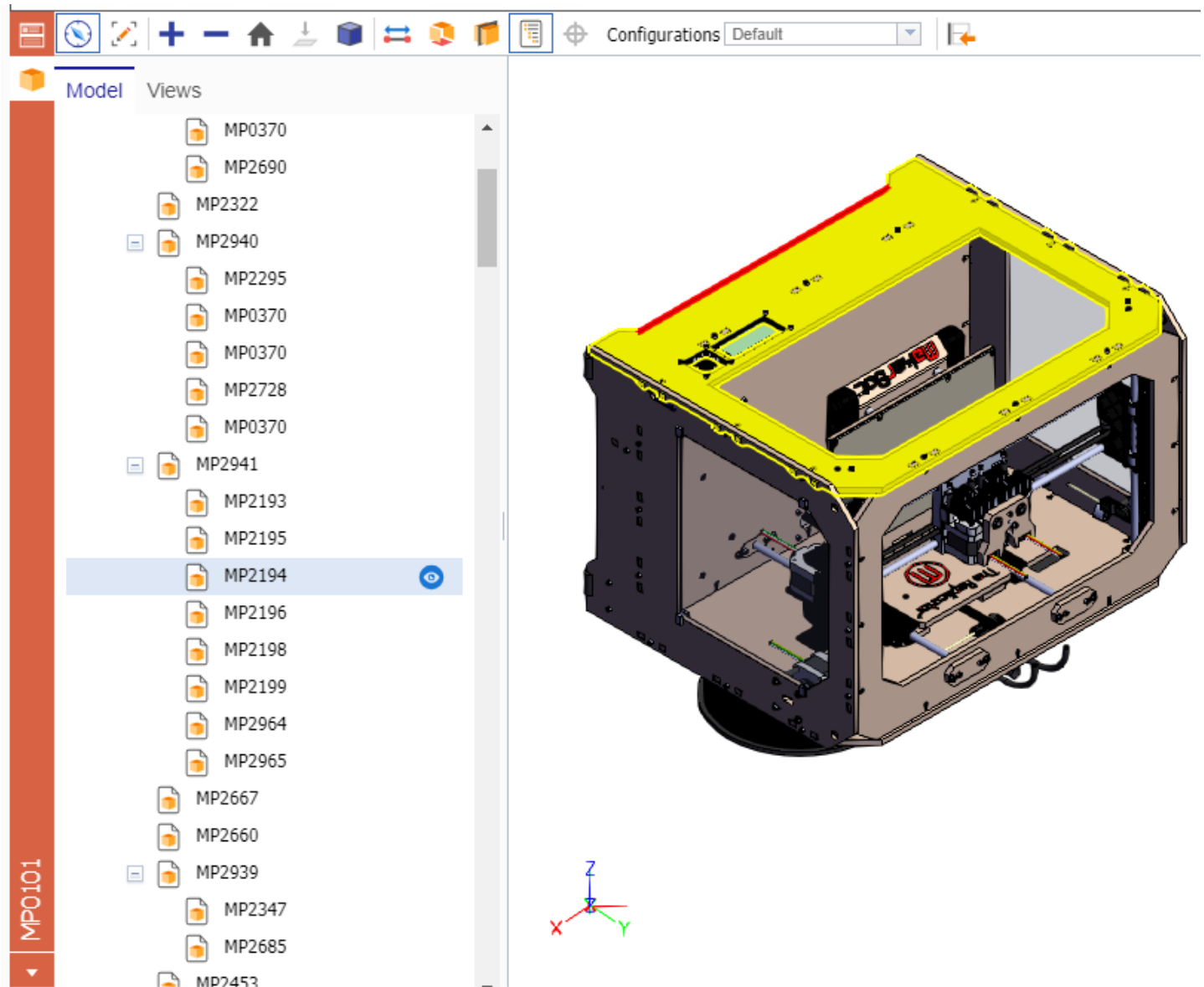


Browsing the CAD Model

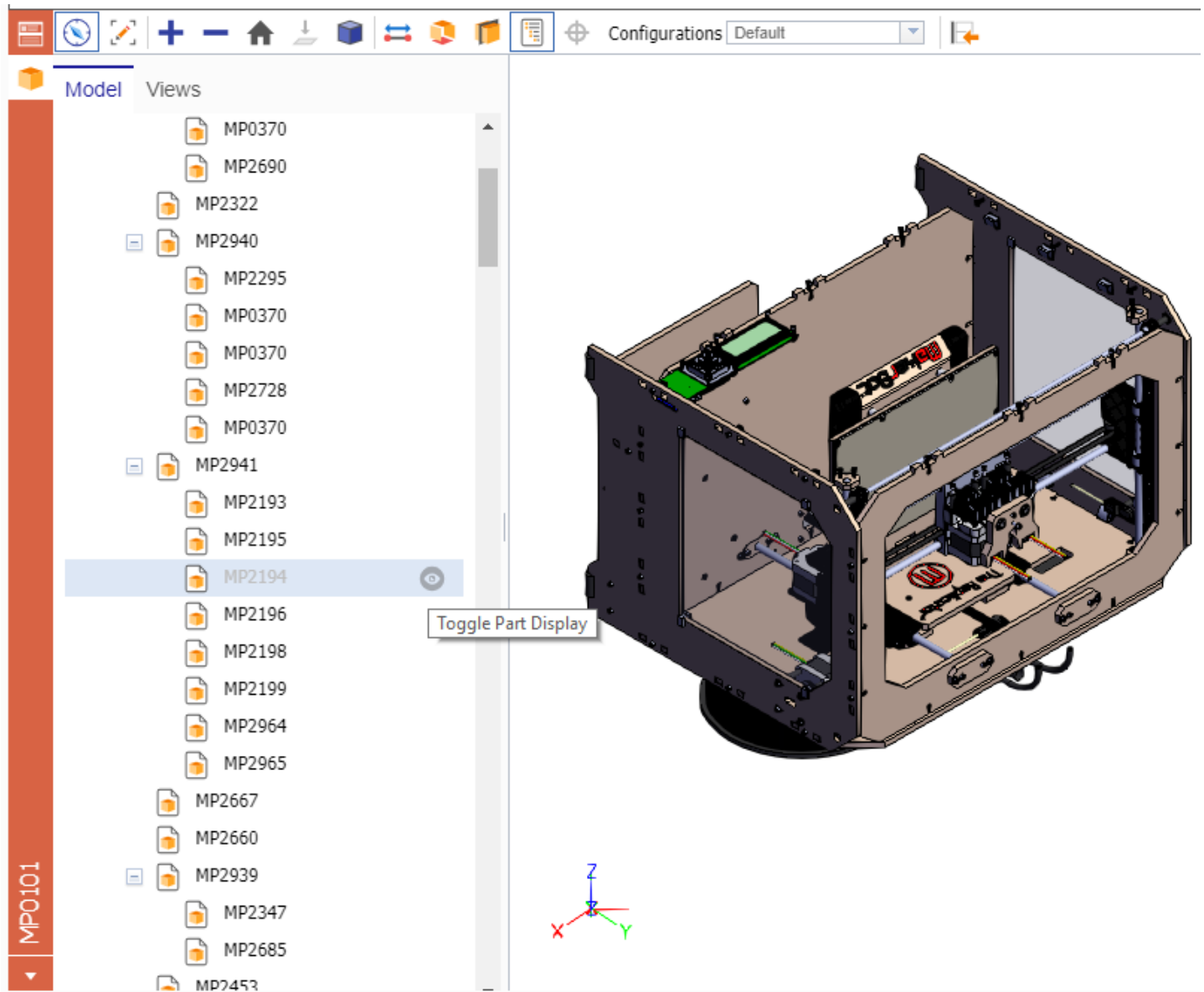
You can use the **Model Browser** to switch quickly between CAD Model viewing positions. The **Model Browser** appears at the left side with the **Views** tab. It displays viewing position options specific to the CAD Model. Click an option to apply its view. Refer to section Using the Viewing Toolbars to access the button.



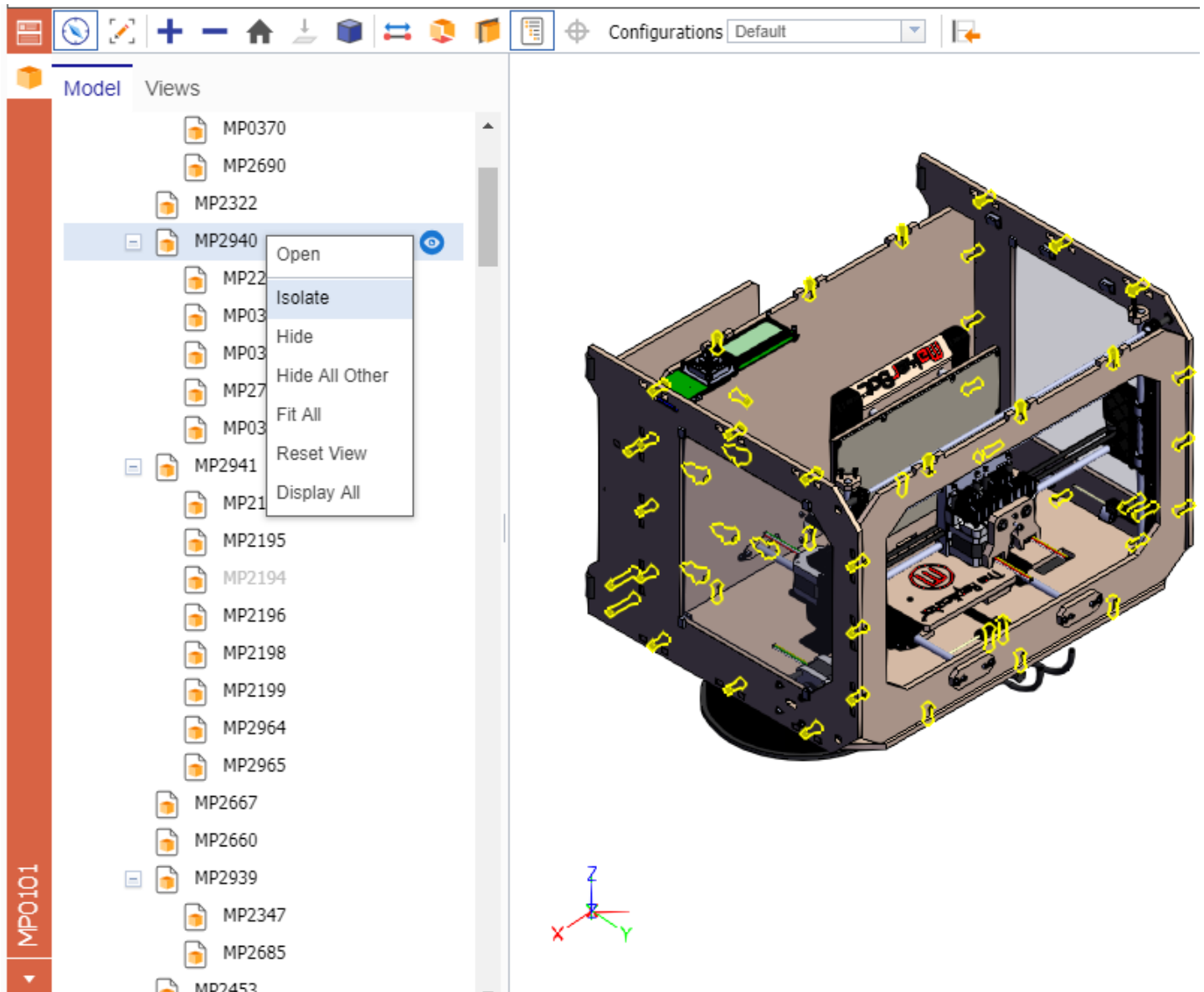
For assemblies, the **Model Browser** provides the **Model** tab for quick navigation through the assembly structure. It appears as a tree of CAD Documents. Click a part on the CAD Model, and its CAD Document is highlighted in the tree. You can also click a CAD Document in the tree, and its part is highlighted on the CAD Model.



Each CAD Document has the **Toggle Part Display** button that enables you to hide/show this part on the CAD Model. Hidden parts in the CAD Documents appear light grey in the tree.



The context menu is available for CAD Document in the tree.



Click the **Model Browser** button on the **Standard Viewing** toolbar to quit the Model Browser. To show hidden parts, click **Display All** in the context menu.

Marking up CAD Models

The CAD integration subscription enables you to mark areas of interest on CAD Models right in Aras Innovator. To do so, position the CAD Model appropriately and then use a **Markup** toolbar as described in the following subsections. The Model context menu and viewing functionality are not available in markup mode. To use them, launch viewing mode.

Using the Markup Toolbars

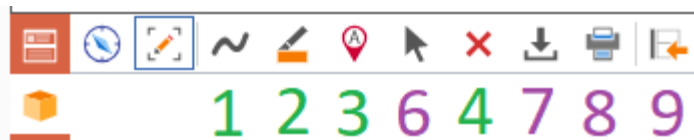
Click the **Markup** toolbar button to launch markup mode and access the **Basic Markup** toolbar. The following buttons appear:



1. **Scribble** shows/hides a toolbar that enables you to draw arbitrary lines on the CAD Model.
2. **Highlight** shows/hides a toolbar that enables you to draw rectangular areas on the CAD Model.
3. **Label** shows/hides a toolbar that enables you to add labels to the CAD Model.
4. **Delete** removes selected markup items from the CAD Model.
5. **Switch To Standard Toolbar** displays the **StandardMarkup** toolbar.

The **StandardMarkup** toolbar includes the same buttons with the exception of the **Switch To Standard Toolbar** button. The **Switch To BasicToolbar** button appears instead.

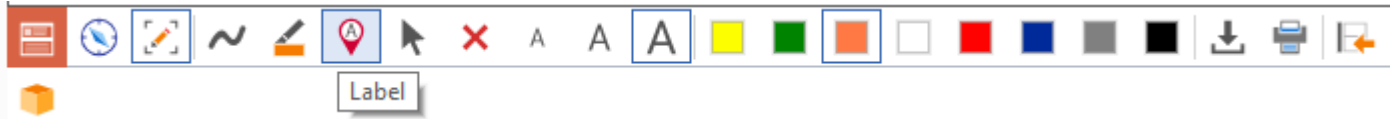
There are additional buttons on the **StandardMarkup** toolbar:



1. **Select** selects markups on the CAD Model.
2. **Download File** downloads a .jpg image of the CAD Model.
3. **Print** uses the standard browser print function for CAD Model images. Depending on the browser and your specific configuration, various print choices, such as printing to a printer or saving to PDF, are available.
4. **Switch to Basic Toolbar** shows the **Basic Markup** toolbar.

Unlike the **Basic Markup** toolbar, the **Standard Markup** toolbar is dynamic. The **Standard Markup** toolbar does not show/hide an additional toolbar containing functionality for a selected markup feature (buttons 1-3), it displays functionality for the selected markup feature. The selected feature and functionality options are enclosed by blue boxes. To hide the functionality options, click the selected feature.

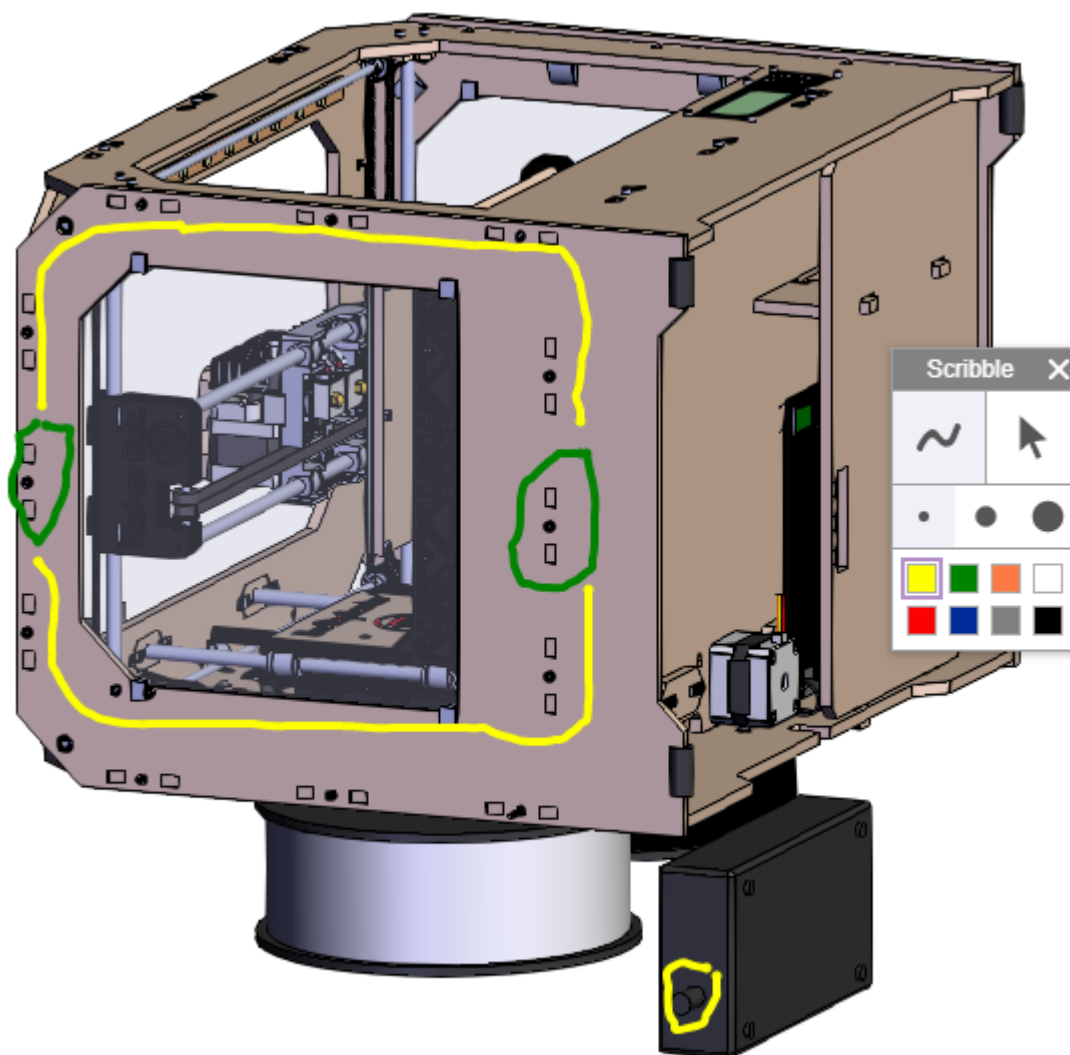




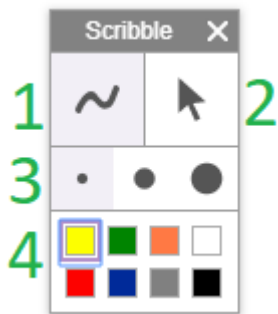
Markup features discussed in the following subsections assume that you have accessed the corresponding feature.

Drawing on CAD Models

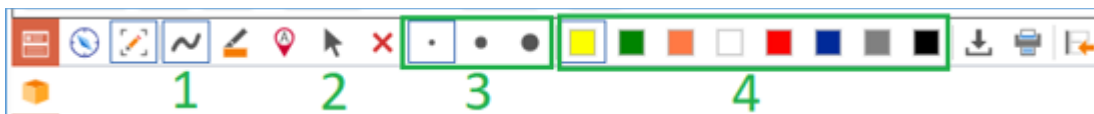
You can draw arbitrary lines on a CAD Model using the scribble feature. Refer to section Using the Markup Toolbars to access the button.



When accessed from the **Basic Markup** toolbar, the scribble feature appears as the **Scribble** toolbar.



When accessed from the **Standard Markup** toolbar, the scribble feature is hosted on this toolbar.



The scribble feature provides the following functionality:

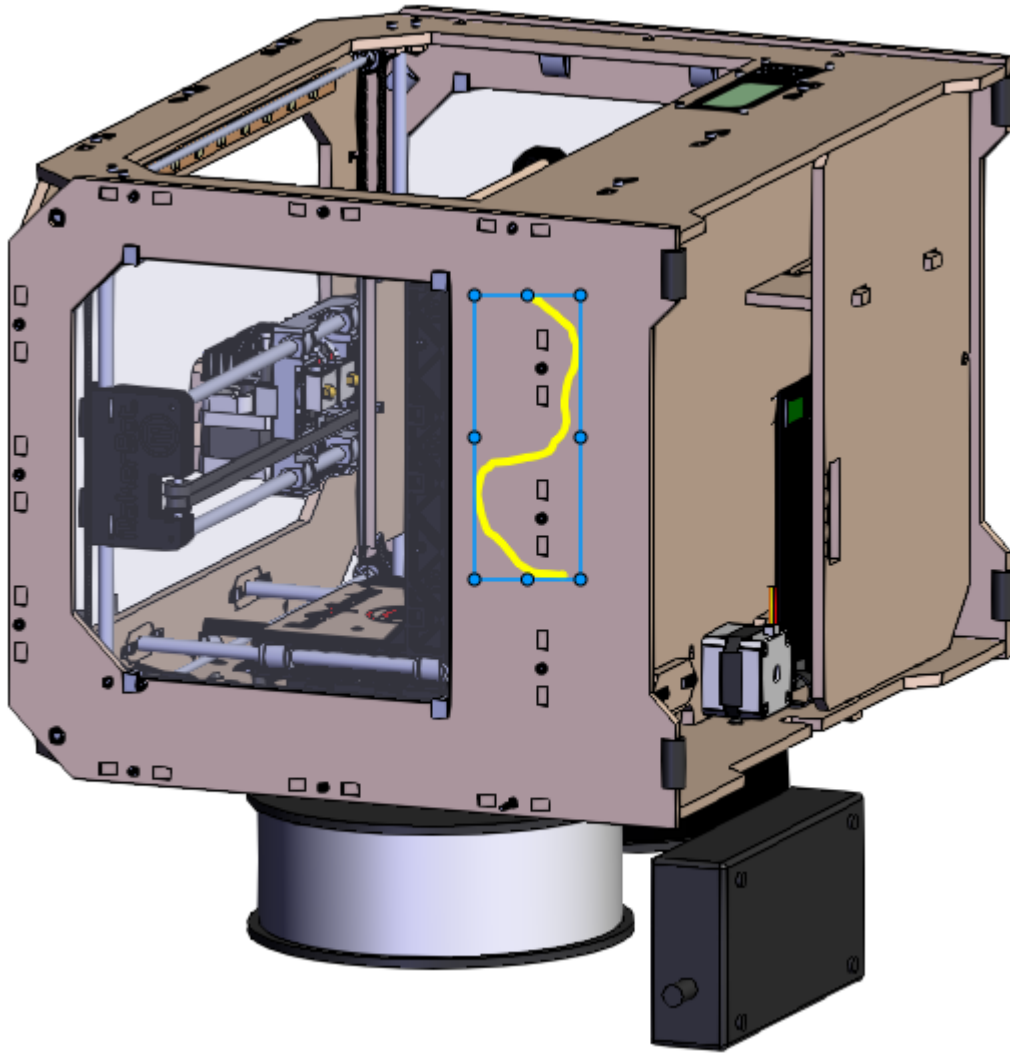
1. **Scribble** draws arbitrary lines on the CAD Model.
2. **Select** selects markups on the CAD Model.
3. You can select one of the following line widths: **Small**, **Medium**, and **Large**.
4. You can select one of the colors displayed on the toolbar.

Click a feature or option to use it.

Click **Select** and then click a line to select it. When selected, the line has **blue edges with circles**.

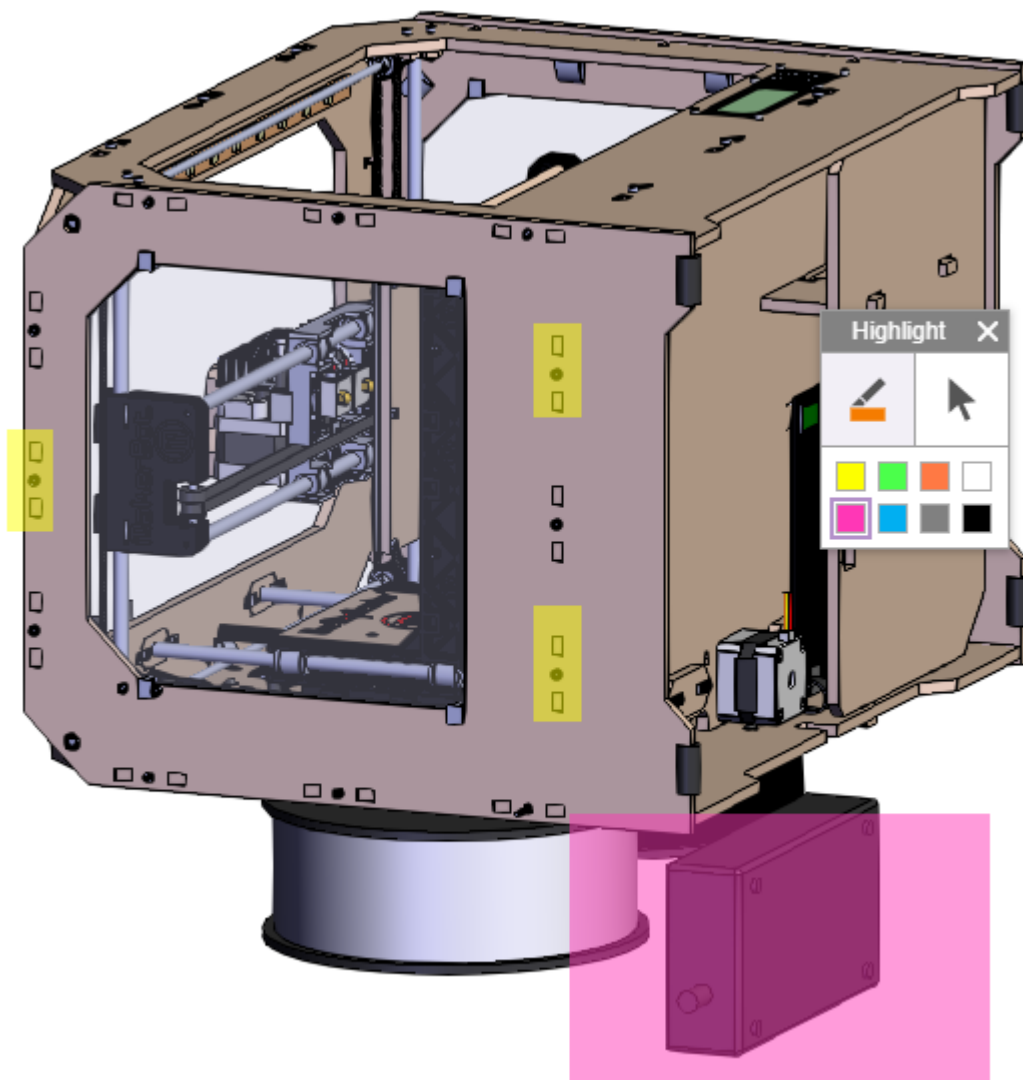
You cannot reposition selected lines.



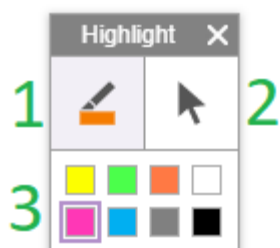


Highlighting Areas on CAD Models

You can specify arbitrary rectangular areas on a CAD Model using the highlighting feature. Refer to section Using the Markup Toolbars to access the button.



When accessed from the **Basic Markup** toolbar, the highlighting feature appears as the **Highlight** toolbar.



When accessed from the **Standard Markup** toolbar, the highlighting feature is hosted on this toolbar.

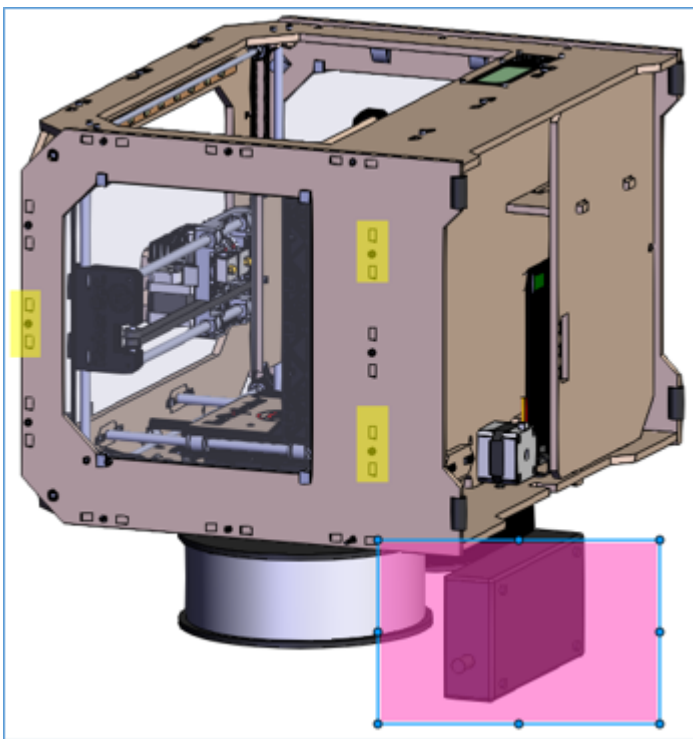


The highlighting feature provides the following functionality:

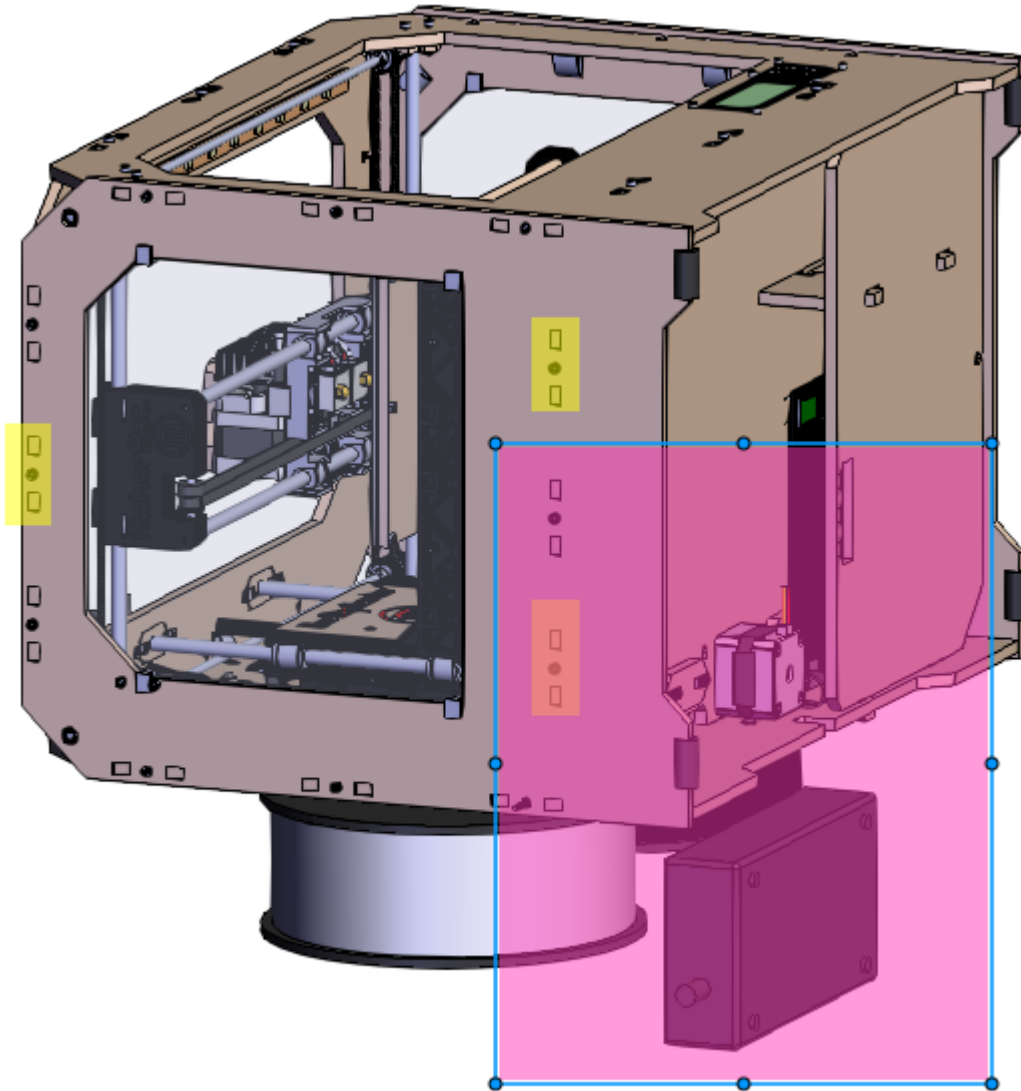
1. **Highlight** draws arbitrary rectangles on the CAD Model.
2. **Select** selects markups on the CAD Model.
3. A set of rectangle colors.

Click a feature or option to use it.

Click **Select** and then click a rectangle area to select this area. When selected, the rectangle area has **blue edges with circles**.

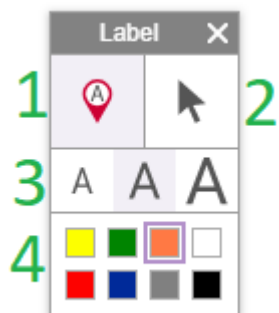


Drag the **blue circles** on the selected rectangle **edges** to reposition the rectangle.



Putting Labels on CAD Models

You can label parts of a CAD Model using the label feature. Refer to section Using the Markup Toolbars to access the button. When accessed from the **Basic Markup** toolbar, the label feature appears as the **Label** toolbar.



When accessed from the **Standard Markup** toolbar, the label feature appears on this toolbar.

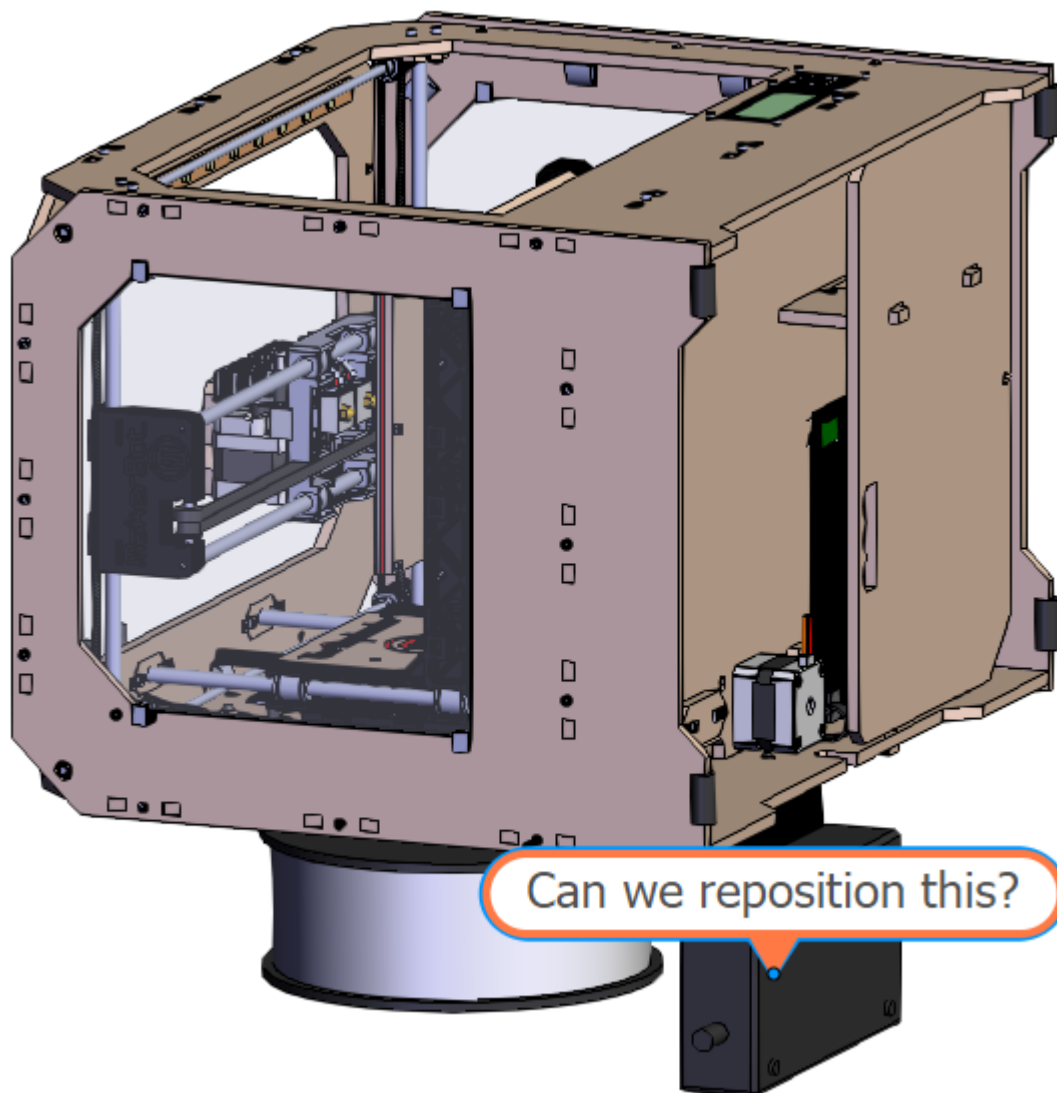


The label feature provides the following functionality:

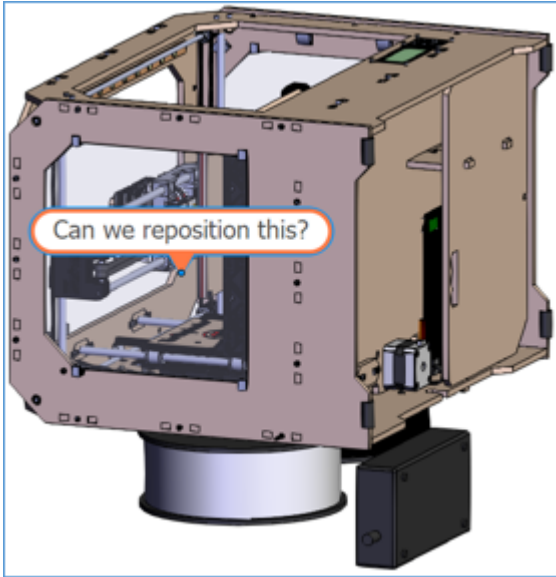
1. **Label** adds labels to the CAD Model.
2. **Select** selects markup items on the CAD Model.
3. A set of font sizes: **Small**, **Medium**, and **Large**.
4. A set of label frame colors.

Click a feature or option to use it. To create a label:

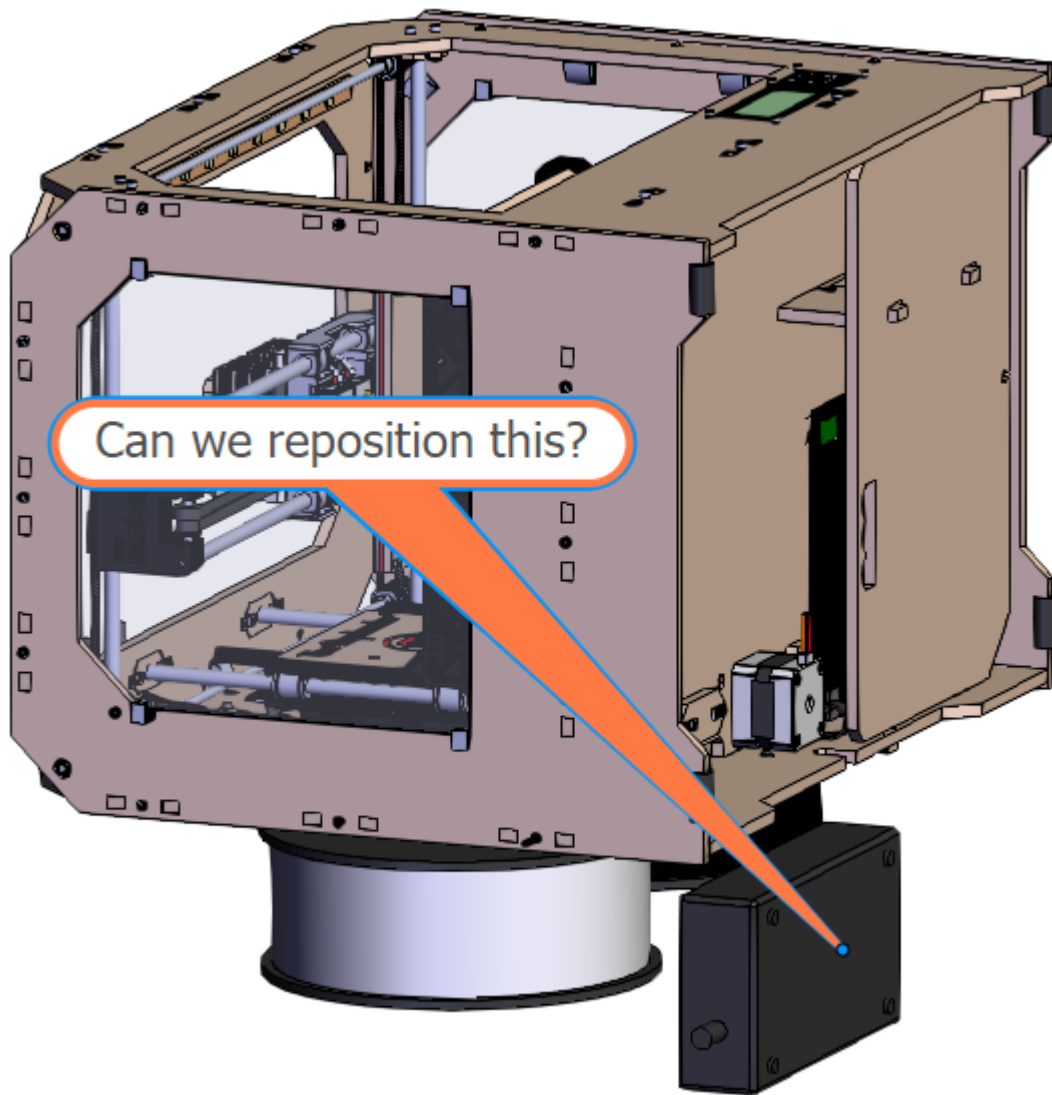
1. Click the **Label** button.
2. Click on the area of the CAD Model that you want to label.
3. Enter the appropriate text inside the label.
4. Click **Select** and then click a label to select it. When selected, the label has **blue edges with a circle at the bottom**.



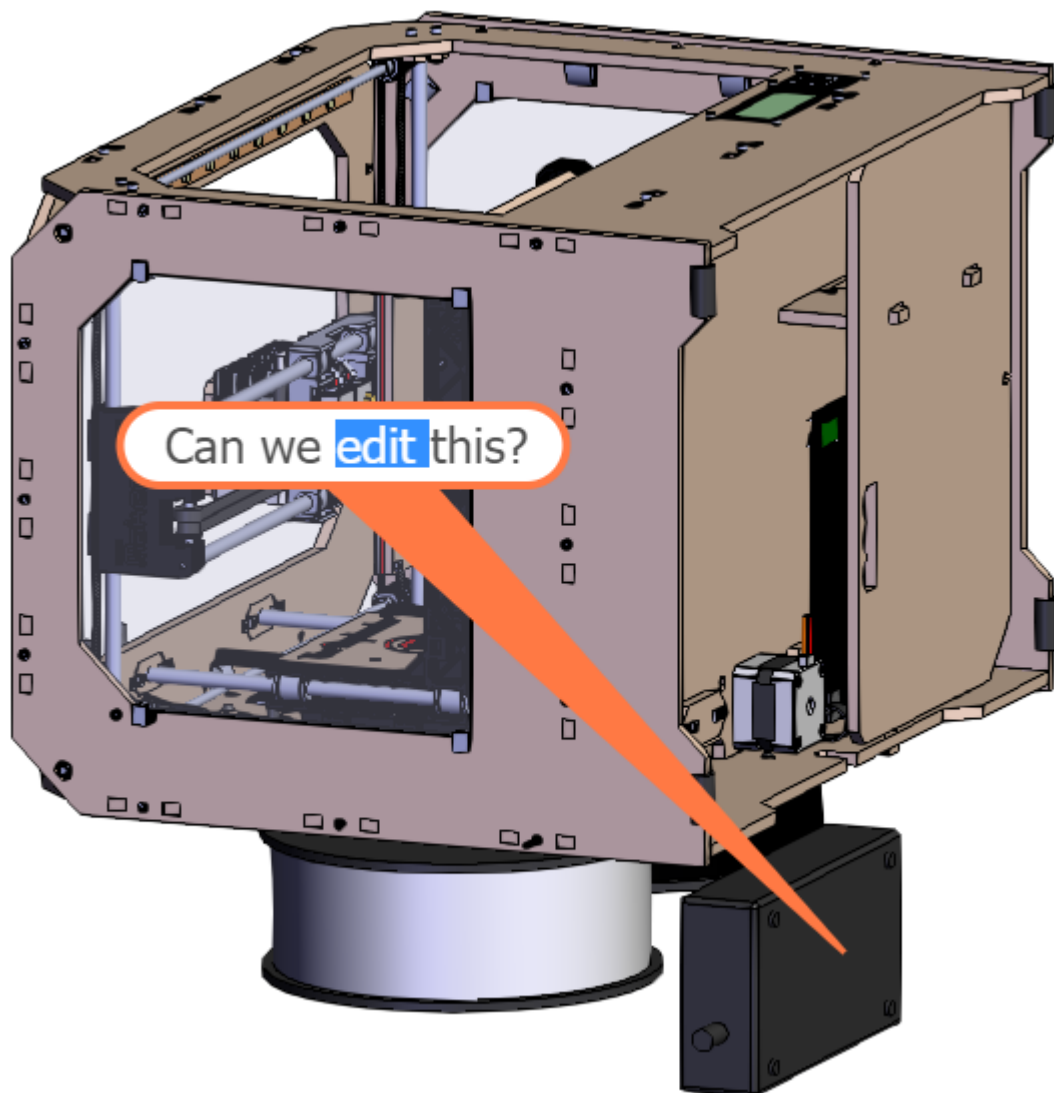
To reposition a label, select and drag **its colored frame** from right above the **blue bottom circle** to the appropriate position on the CAD model.



To change where a label points to, select the label, and drag **the blue bottom circle**.

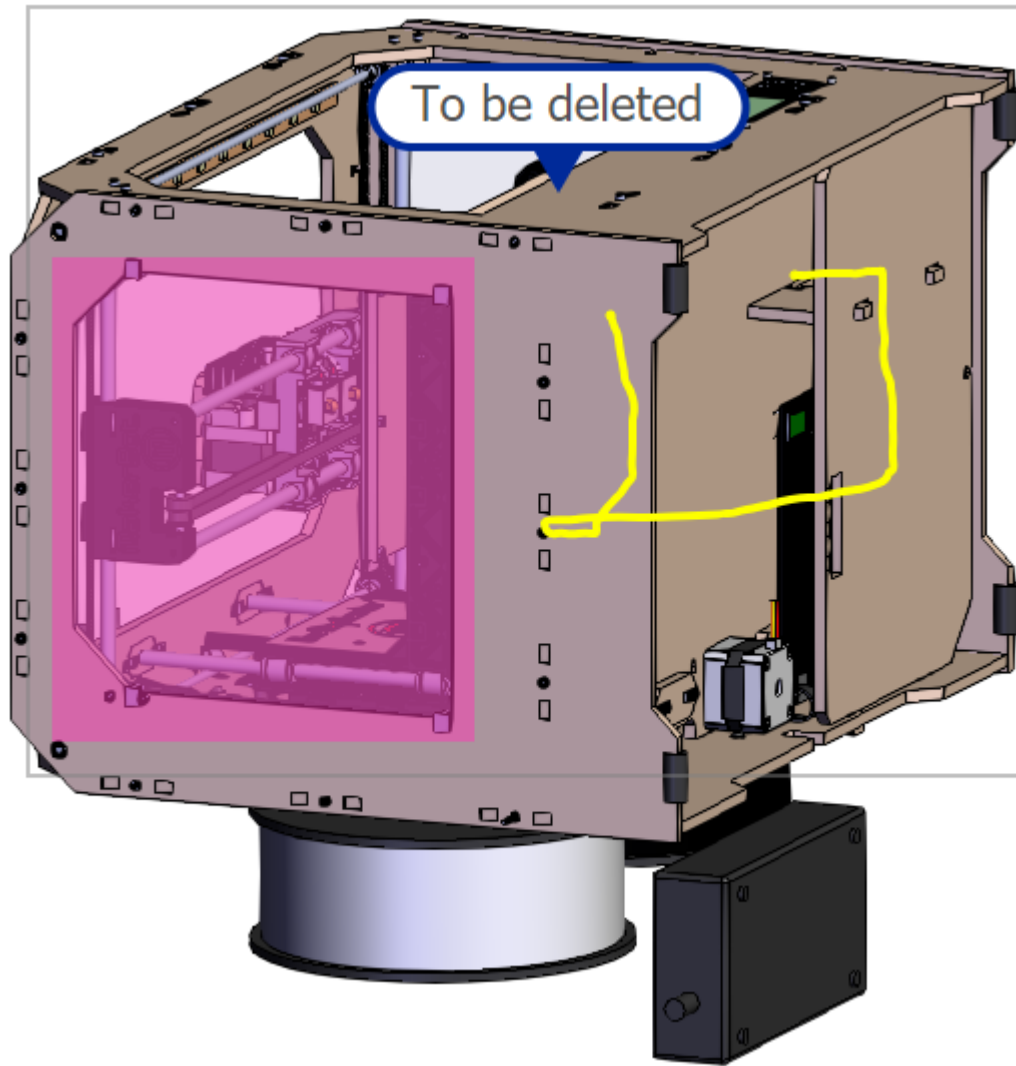


To enter or change the label text, click inside the label, and edit the text.

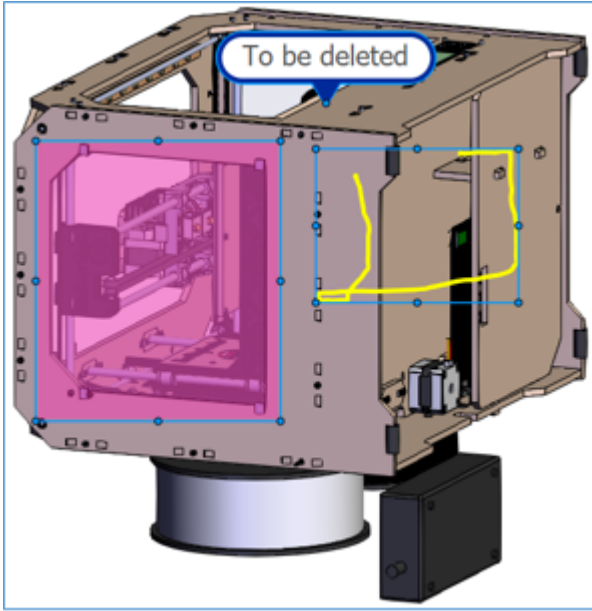


Selecting Markups on CAD Models

You can select a single or several markup items for further actions. Selected items have **bold blue edges** with **circles**. Further actions, position and number of the **circles** depend on the markup type of each item. To select a single markup item, click **Select** on a **Markup** toolbar and then click the **item**. To select several markup items, click **Select** on a **Markup** toolbar and drag the cursor to specify the rectangular selecting area.



All the markup items within the selected area become selected.



Deleting Markups on CAD Models

To delete markup items, select them and then use one of the following options:

- Click **Delete** on a **Markup** toolbar.
- Press **Delete** on your keyboard.

Downloading CAD Models

Click **Download File** on the **Standard Markup** toolbar. The standard downloading process of your browser saves a .jpg image of the CAD Model representation on your local machine. Refer to section Using the Markup Toolbars to access the button.

Printing CAD Models

Click **Print** on the **Standard Markup** toolbar. The standard print function of your browser starts. Depending on the browser and your specific configuration, various print choices, such as printing to a printer or saving to PDF, are available. Refer to section Using the Markup Toolbars to access the button.

Deleting CAD Documents

It is possible to delete all or some versions of a CAD Document. In the former case, the CAD Document is deleted from Aras Innovator completely. For details on the latter case, refer to section

Version Deletion.

To delete a CAD Document completely, you must have **Delete** rights granted in Permissions for all Life Cycle states associated with that CAD Document. For example, if the new CAD Document revision is currently in the Preliminary state, but has Released revisions, you must have the **Delete** rights granted in Permissions for both life cycle states. For details on access rights, refer to section Permissions. This subsection assumes that you have all necessary rights.

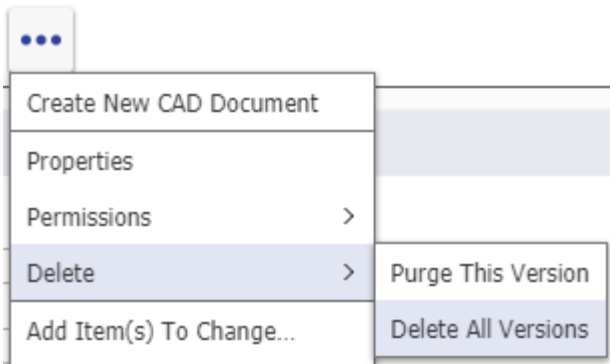
You cannot delete a CAD Document, which is attached to a Part or another CAD Document.

Important

CAD Documents that are claimed by any user or are used on other items cannot be deleted.

CAD Documents can be deleted using either its view or the context menu in the CAD Documents Search Page. To delete a CAD Document from its view:

1. Open the CAD Document.
2. On the CAD Document toolbar, click **More** → **Delete** → **Delete All Versions**.



3. Click **OK** in the confirmation dialog to delete the CAD Document.



Deleting item "CPACAD-0102". Are you sure?

OK

Cancel

To delete a CAD Document using its context menu:

1. Go to the Documents Search Page.
2. Right-click the Document to be deleted and click **More** → **Delete** → **Delete All Versions**.
3. Click **OK** in the confirmation dialog to delete the Document.

Finding Where a CAD Document is Used

There are several methods to determine where a CAD Document is used:

- The Parents accordion tab on the CAD Document
- Parts associated with a CAD Document
- The Where Used browser

CAD Document Parents

The **Parents** accordion tab of the CAD Document view shows a read-only list of the CAD Document's direct Parents.



MP0370c

☆

Save

Done

Discard

CAD Document

Structure

Parents

Files

Changes

Document Number	Revision	Name	Type	State	Claimed By ...	Native File [...]	Viewable File [...]	Authoring Tool	Changes	Standard	Template	Gen
MP2940	A	Body Hardware	Mechanical/Assembly	Released		MP2940.SLDASM	MP2940.pdf	SolidWorks	☐	☐	☐	1
MP2943	A	Build Platform	Mechanical/Assembly	Released		MP2943.SLDASM	MP2943.pdf	SolidWorks	☐	☐	☐	1
MP2948	A	Cover Hardware	Mechanical/Assembly	Preliminary		MP2948.SLDASM	MP2948.pdf	SolidWorks	☐	☐	☐	1
MP2953	A	Extruder Hardware	Mechanical/Assembly	Released		MP2953.SLDASM	MP2953.pdf	SolidWorks	☐	☐	☐	1
MP2956	A	Gantry	Mechanical/Assembly	Released		MP2956.SLDASM	MP2956.pdf	SolidWorks	☐	☐	☐	1
MP2963	A	Stepper Motor Assembly	Mechanical/Assembly	Released		MP2963.SLDASM	MP2963.pdf	SolidWorks	☐	☐	☐	1
MP2968	A	XY Stage	Mechanical/Assembly	Released		MP2968.SLDASM	MP2968.pdf	SolidWorks	☐	☐	☐	1

1. Right-click a Parent CAD Document and click **View** open the selected Parent.
2. To download the native or viewable files, click on the link in the corresponding cell.

Parts Associated with a CAD Document

CAD Documents can be attached to a Part, but Parts cannot be attached to a CAD Document. You can use the Parts accordion tab on the CAD Document to explore which Parts include this CAD Document as an attachment.

Important

If the CAD Document is not attached anywhere, there are no Part links or Part accordion tabs.

If the CAD Document is attached to a single Part, there is a link to this Part but there is no Parts accordion tab.



^
CAD Document

Document Number
MP0370c
Revision
A
State
Preliminary

Assigned Creator
Innovator Admin

Name
M3xNN Socket Cap Bolt

Designated User
Innovator Admin

Type
Part
Authoring Tool
SolidWorks
Version
sw2014

From Template
☐ Changes Pending
☐ Standard
☐ Template

Description

Part
MP0190

If the CAD Document is attached to several Parts, the Part link and the Parts accordion tab appear. Clicking on the Part link opens the Parts accordion tab. Right-click a Part in the Parts grid and click View to open the selected Part.



CAD Document

Document Number

MP0370c

Revision

A

State

Preliminary

Assigned Creator

Designated User

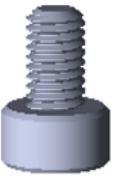
From Template

☐ Changes Pending
 ☐ Standard
 ☐ Template

Part

See tab

Extended Classification



Native File

MP0370.SLDPRT

Viewable File

MP0370.pdf

Name

M3xNN Socket Cap Bolt

Type

Part

Authoring Tool

SolidWorks

Version

sw2014

Description

Structure

Parents

Parts

Files

Changes

Part Number	Re...	Name	Type	State	Locked By [...]	Cost	Chan...	g...
MP0370-001	A	M3x5 Socket Cap Bolt	Component	Released		0.0800	☐	1
MP0370-002	A	M3x6 Socket Cap Bolt	Component	Released		0.0800	☐	1
MP0370-003	A	M3x10 Socket Cap Bolt	Component	Released		0.0800	☐	1
MP0370-004	A	M3x16 Socket Cap Bolt	Component	Released		0.0800	☐	1

If a previous (not the latest) revision of a CAD Document is attached to a Part, the **Part** link is displayed as broken.





CAD Document

Document Number

MP0370c

Revision

B

State

Preliminary

Assigned Creator

Innovator Admin



Name

M3xNN Socket Cap Bolt

Designated User

Innovator Admin



Type

Part



Authoring Tool

SolidWorks



Version

sw2014

From Template

☐ Changes Pending

☐ Standard

☐ Template

Description

Part

[Child Part A Alternate](#)



