



MBD TDP Reference Guide

MAN-00011 / 3

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MBD: Model Based Definition

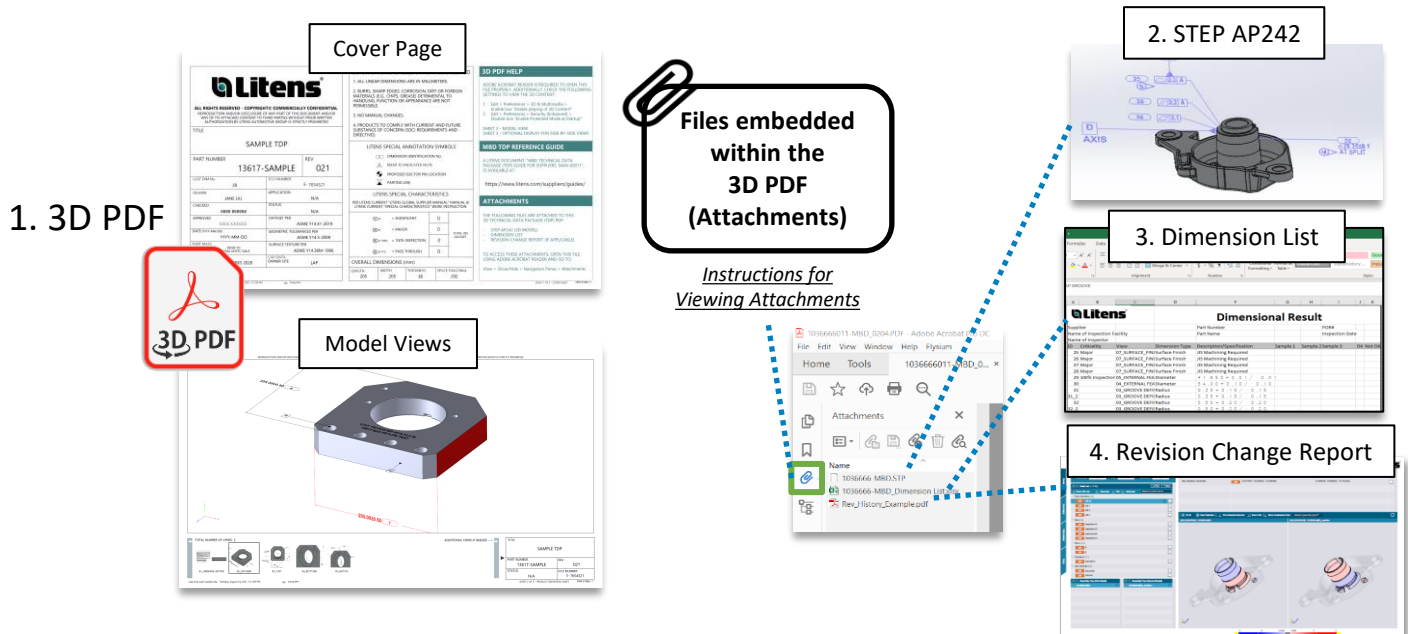
TDP: Technical Data Package

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TDP Overview

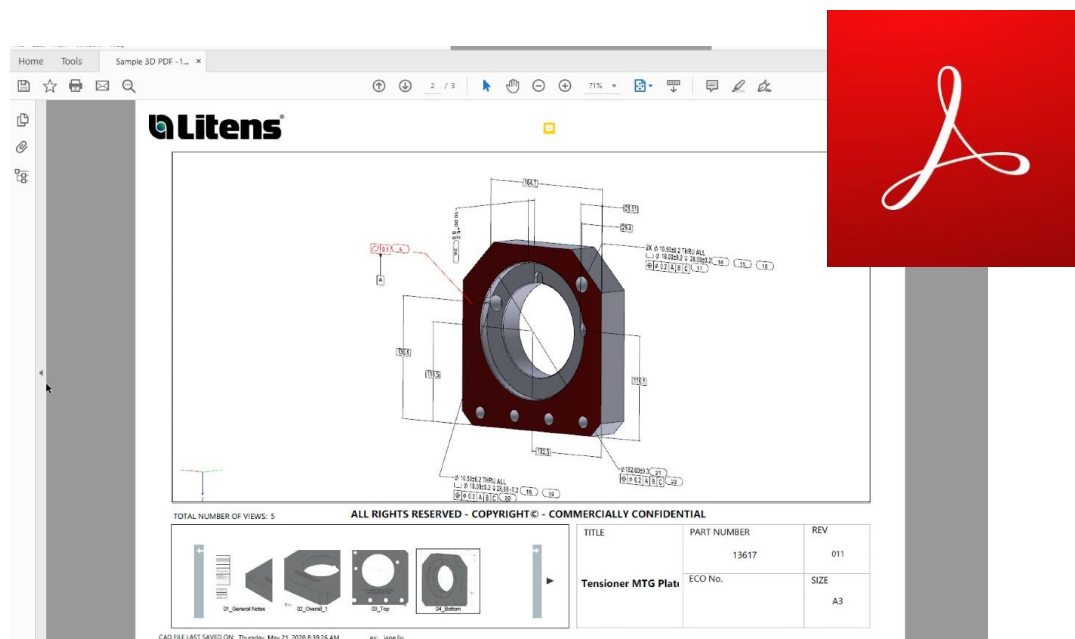
A Technical Data Package (“TDP”) contains the technical description of an item, adequate for supporting acquisition strategies, production, engineering, and quality assurance. The TDP is stored in a single 3D PDF file with attachments.



Recommended PDF Viewer – Adobe

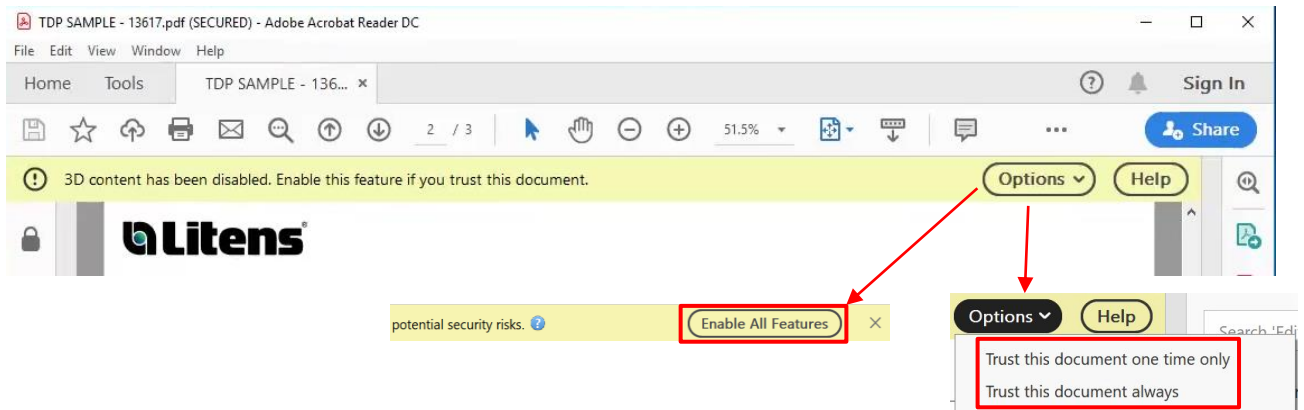
The recommended 3D PDF viewer is **Adobe Acrobat Reader**. Other PDF viewers, such as Microsoft Edge and Google Chrome, do not support 3D models

It is available to download for free on Adobe’s site: [Link to Adobe](https://www.adobe.com/uk/acrobat/pdf-reader.html)



Recommended Adobe Settings

When opening a 3D PDF, a yellow banner may appear over the top saying “3D content has been disabled”. Click “Enable All Features” or select “Trust this document...” in the options menu. Then, adjust your Adobe settings as shown below to avoid these yellow notices for future files.



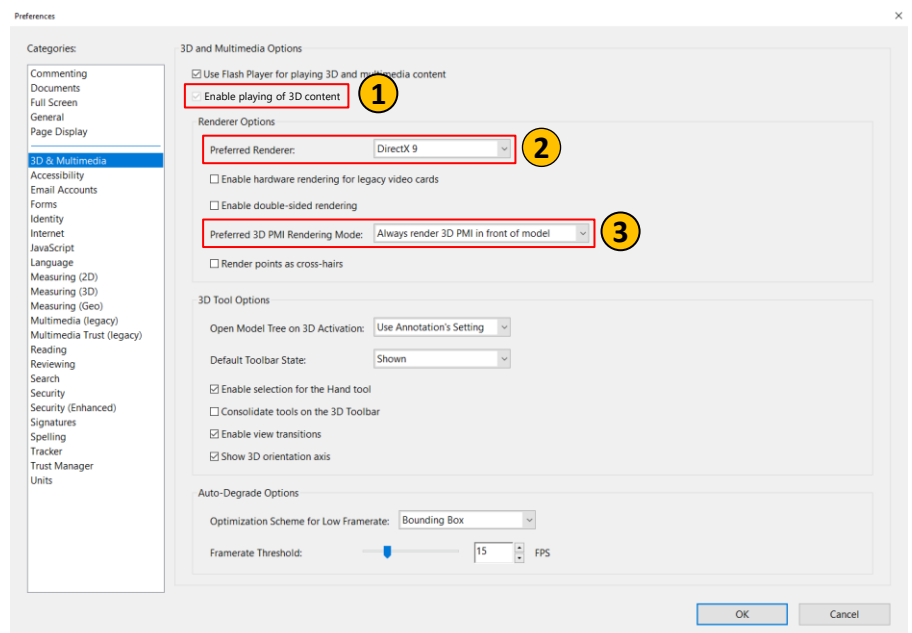
Please use the following Adobe settings for opening 3D PDF's. Otherwise, the 3D content may not work properly. 3D PDF files must be closed for settings to apply.

Go to **Edit > Preferences** at the top toolbar. Check the following categories

3D & Multimedia

1. **Enable playing of 3D Content** > Enable
2. **Preferred Renderer** > DirectX 9
3. **Preferred 3D PMI Rendering Mode** > “Always render 3D PMI in front of model”

Adobe Help Article:
[Displaying 3D models in PDFs](#)
 (see 3D preferences)

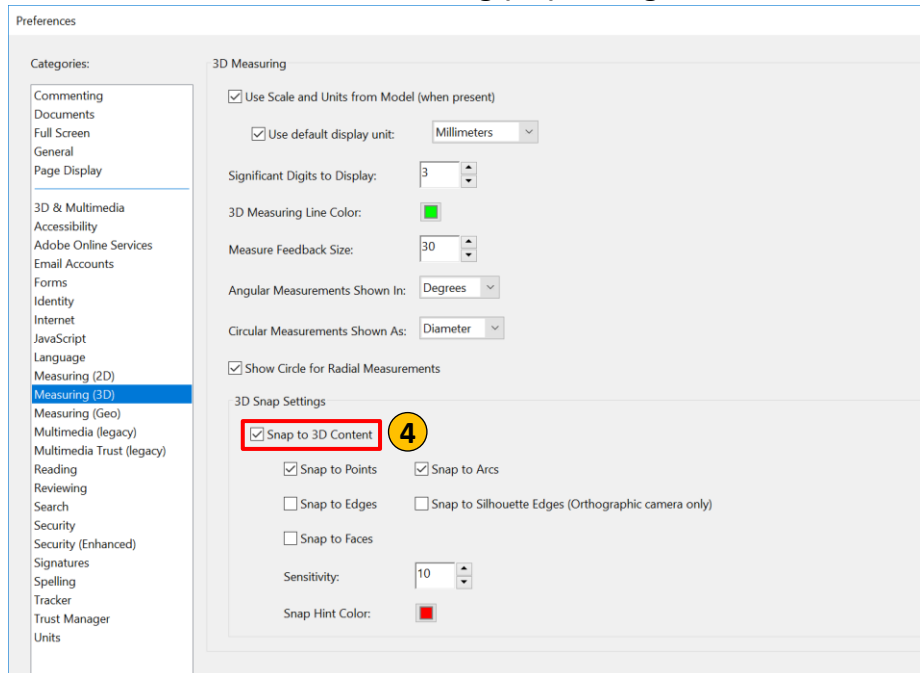


More settings
on next page

Go to **Edit > Preferences** at the top toolbar. Check the following categories

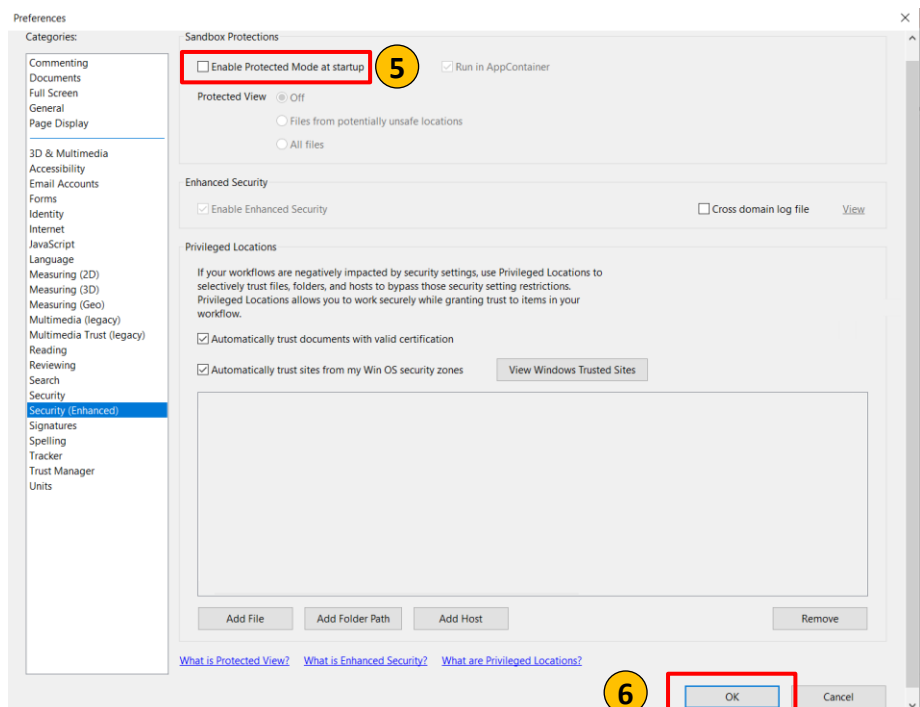
4. Snap to 3D Content > Enable

Measuring (3D) Settings



**5. Enable Protected Mode at startup
> Disable**

Security (Enhanced) Settings



6. Click OK and close the 3D PDF file for the settings to apply.

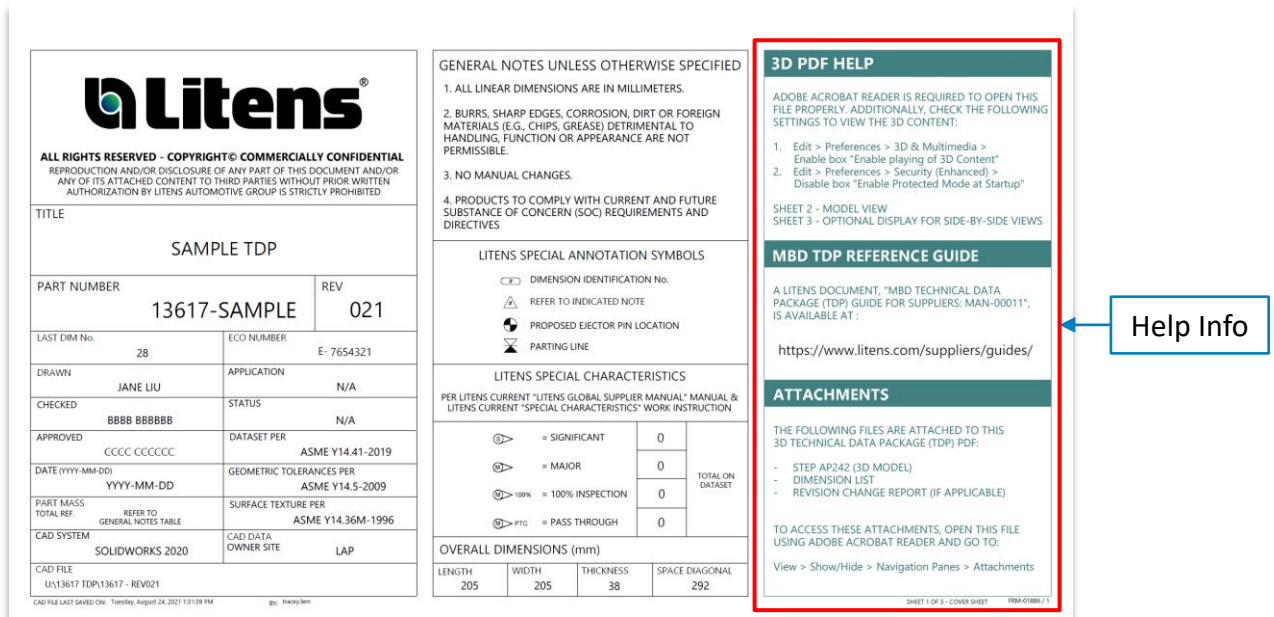


More settings on
previous page

Litens 3D PDF Overview

Sheet 1 – Cover Page

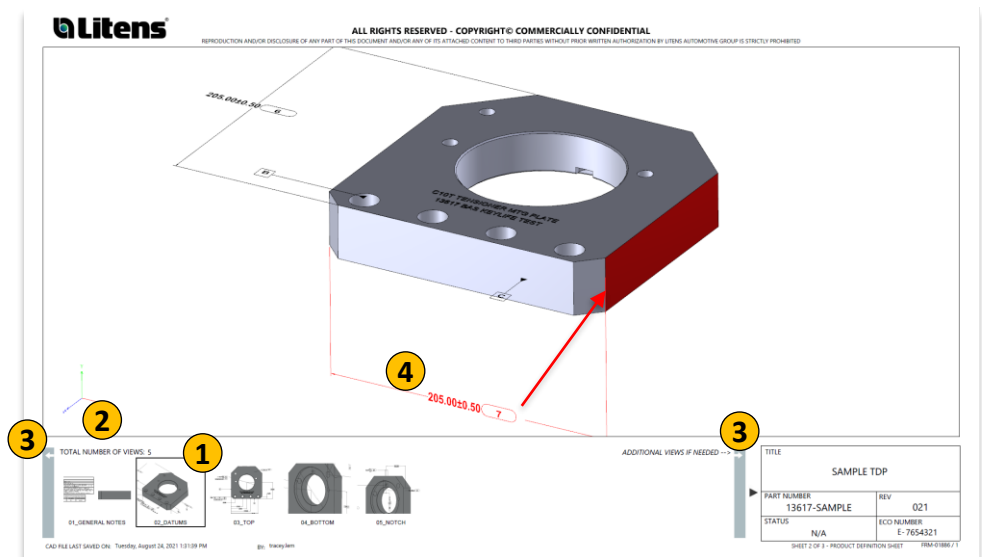
The cover page will show when the 3D PDF is opened. This page includes title-block information and a help section for new users.



Sheet 2 - Model View

The second page displays all model views, including general notes and an embedded 3D model. Listed are four key features and functions:

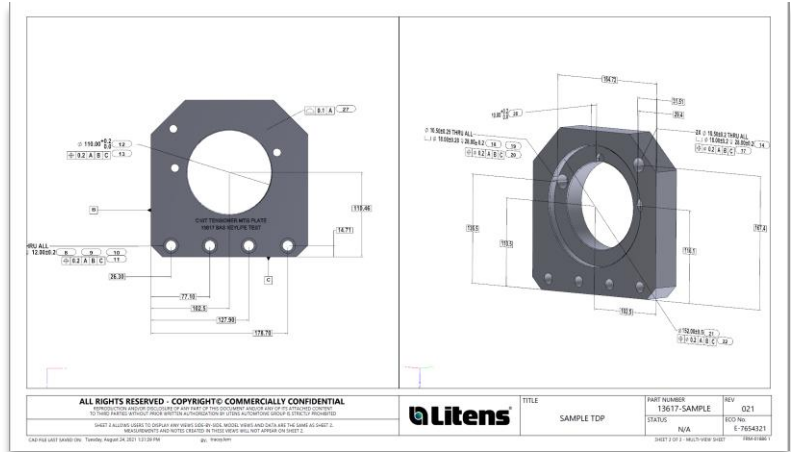
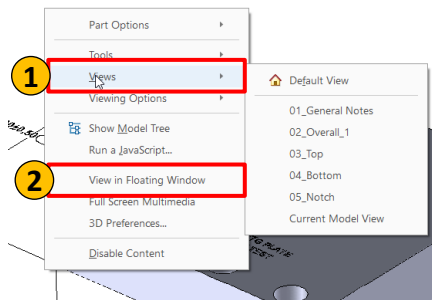
- 1 To change views, click the thumbnail in the Carousel.
- 2 The **total** number of views is listed
- 3 To scroll though the list of **views**, use the left and right navigation buttons
- 4 When a dimension is selected, the **associated features** will **highlight** on the model in red.



Sheet 3 - Side-by-Side View

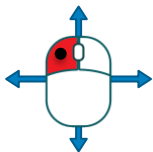
The third page displays a side-by-side view of the model.

- 1 To **change views**, right click on the model, select “Views” and select the desired view.
- 2 To **create a resizable floating window of the view**, right click and select “View in Floating Window”.

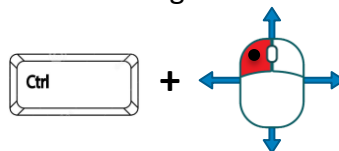


Viewing Tools

To **rotate** the model, hold left-click and drag

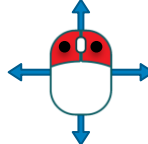


To **pan** the model, hold CTRL and drag



Or hold both left and right mouse buttons and drag

or



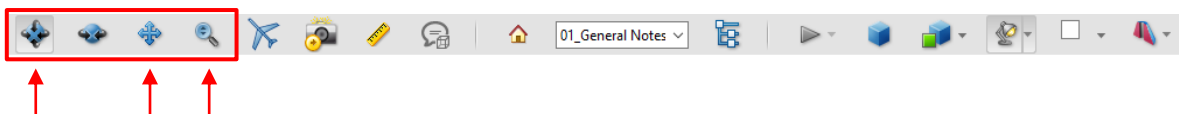
To **zoom** in/out, scroll in and out over the model



Or hold right-click and drag



Alternatively, use the icons in the toolbar to access the viewing tools



Additional Adobe Help Articles:

- [Displaying 3D models in PDFs](#)
- [Interacting with 3D models](#)

Viewing TDP Attachments

Attachments on a TDP include a STEP AP242 file (.stp), a Dimension List (Excel) and a Revision Change Report, if applicable. To access, click the **paperclip** (📎) on the left. Attachments can be opened or saved.

Note: if there is no paperclip icon, click the left-side panel to expand the toolbar:

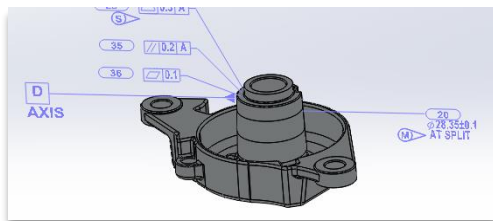
Tip: To always show the attachment list when opening future PDF's: Right-click over Attachments (📎) and select Pin Attachments.

To hide this panel: Right-click over Attachments (📎) and select Unpin Attachments.

STEP AP242

A STEP AP242 is a neutral CAD format that is compatible with different CAD programs. The STEP AP242 file format contains PMI, while other STEP formats (eg. AP203, AP214) do not support PMI.

Check your software to see if it supports STEP AP242 files and/or the embedded PMI.




A STEP AP242 file is a **Neutral** file








Neutral: File format that can be read by any CAD system

Dimension List

The dimension list is an Excel sheet that is automatically generated using the MBD model. It will list dimensions, GD&T, notes and table entries. This sheet can be used during inspection for digitized measurement results.



Dimensional Result

Supplier			Part Number			POR#					
Name of Inspection Facility			Part Name			Inspection Date					
Name of Inspector											
ID	Criticality	View	Dimension Type	Description/Specification	Sample 1	Sample 2	Sample 3	OK	Not OK	Comment	
13		03_FRONT	Flatness	 0.20							
14		04_RIGHT	Diameter	35.55 - 35.75							
15		03_FRONT	SurfaceProfile	 0.50 A							
16		06_LEFT	Diameter	24.5 - 24.8							
17		06_LEFT	Perpendicularity	 0.15 A							
18	Major	04_RIGHT	Radius	20.90 - 20.95							
19		03_FRONT	SurfaceProfile	 0.20 A							
20		06_LEFT	Position	 0.20 A B							
21		04_RIGHT	Diameter	41.5 - 41.7							
22		04_RIGHT	Position	 0.04 A B							
23		04_RIGHT	Position	 0.20 A B							

GD&T entries use a font called Litens

It is free to download and use

[Link to download font](#)

GD&T entries use a font called "SWGDT". It is free to download and install.
[Link to download font](#)

The Dimension ID and View correspond to the 3D PDF

Revision Change Report (if applicable)

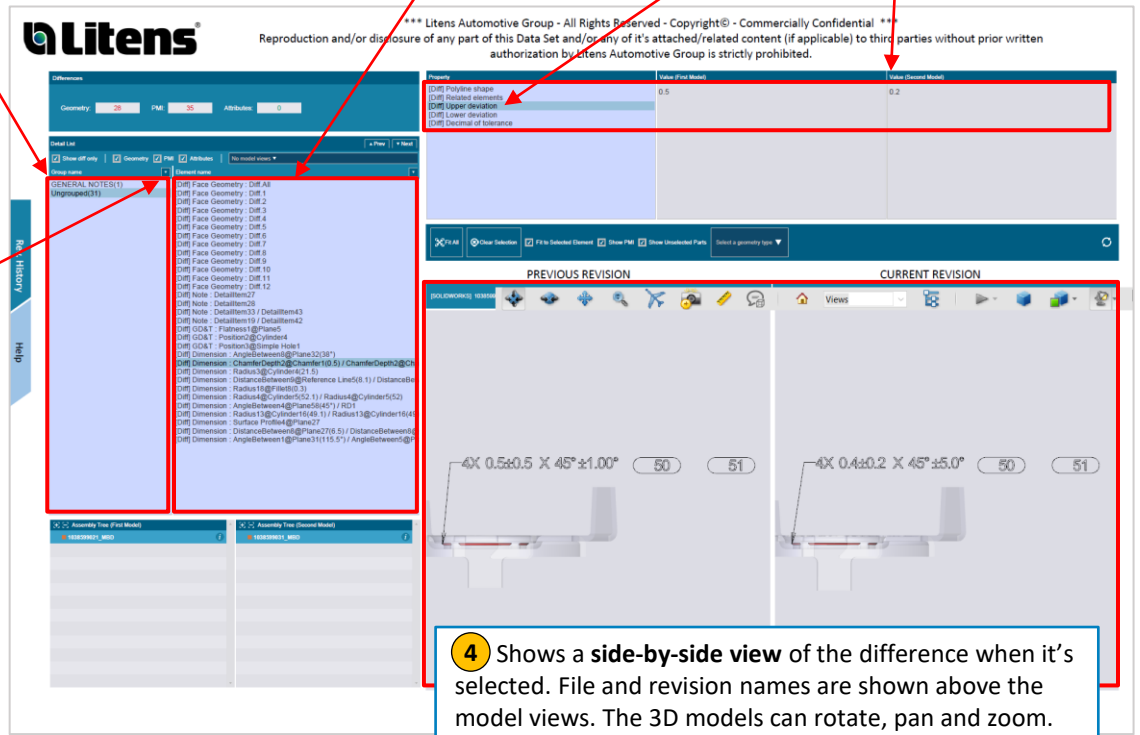
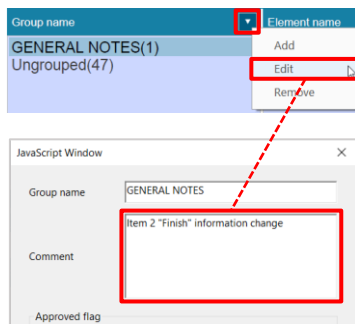
Revision history will be documented with Revision Change Reports for MBD models. The report contains the geometry and PMI differences between two revisions, with embedded 3D models

1 Shows **groups**, where most changes will be in "Ungrouped". There are separate groups for Tables and General Notes.

2 Lists the **individual differences** in the selected group. Select a difference to highlight it on the model.

3 Details will be listed when an individual difference is selected. Select a property to display the old and new values.

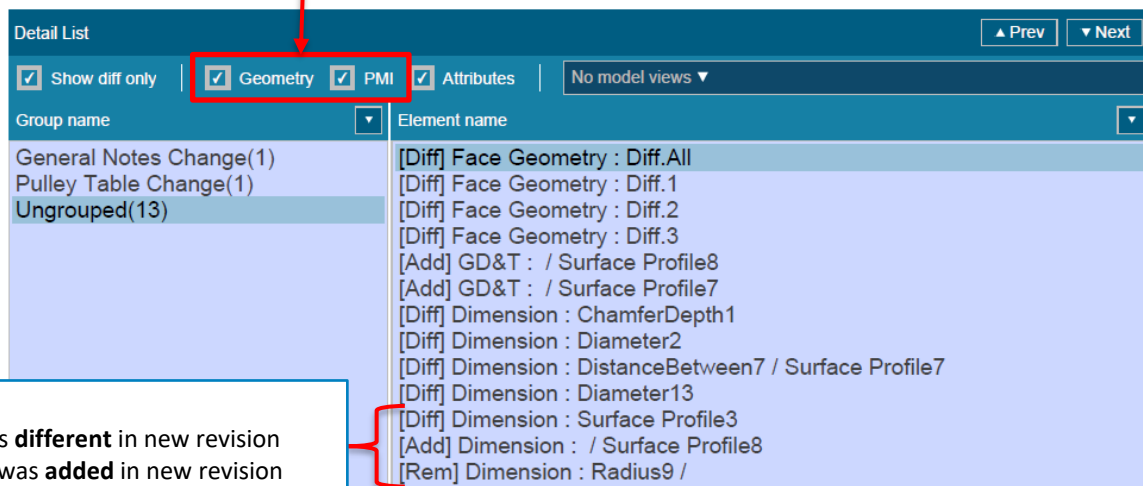
5 For **Table Changes**, select the group and drop-down arrow. Then select **Edit**. A pop-up window with the change description will appear.



4 Shows a **side-by-side view** of the difference when it's selected. File and revision names are shown above the model views. The 3D models can rotate, pan and zoom.

Additional Information:

Filters to view Geometry or PMI changes only



Legend
[Diff] Item is **different** in new revision
[Add] Item was **added** in new revision
[Rem] Item was **removed** in new revision

Revision Change Report (ctd.)

Example - Face Geometry Changes

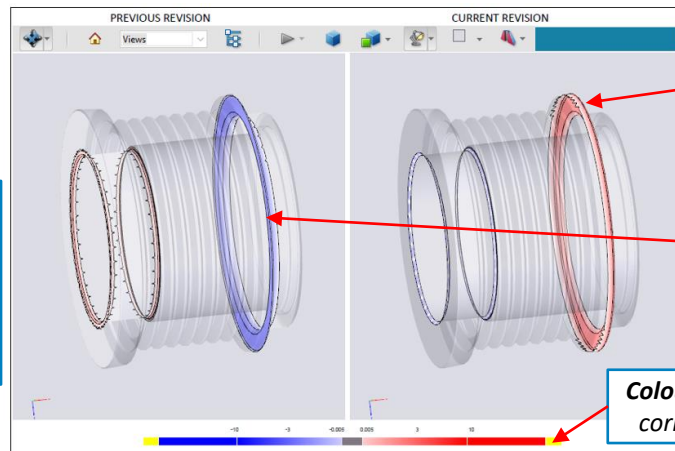
For any selected Face Geometry item, clicking on **Max Deviation** will display the deviation values in the Property section.

Property	Value (First Model)	Value (Second Model)
[Diff] Feature		
[Diff] Max deviation	0.250000 mm	0.250000 mm
[Diff] Max deviation coordinate		

Element name
[Diff] Face Geometry : Diff.All
[Diff] Face Geometry : Diff.1
[Diff] Face Geometry : Diff.2
[Diff] Face Geometry : Diff.3

Diff.All will show all geometry changes on the model, using the Blue <--> Red colour scale. It's a good way to see an overview of all the geometry changes at once.

Diff.(1,2,3,...) will show individual changes.



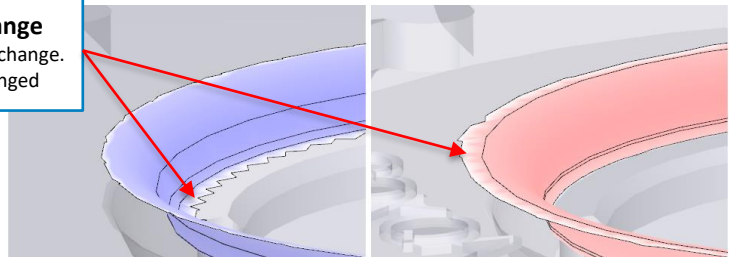
Red = More material

Blue = Less material

Colour scale: Magnitude of change correlates with colour saturation

White or light faces with jagged edges = No change

These are usually faces that are tangential to an actual design change. In this example, only the fillet radius (blue/red portion) changed

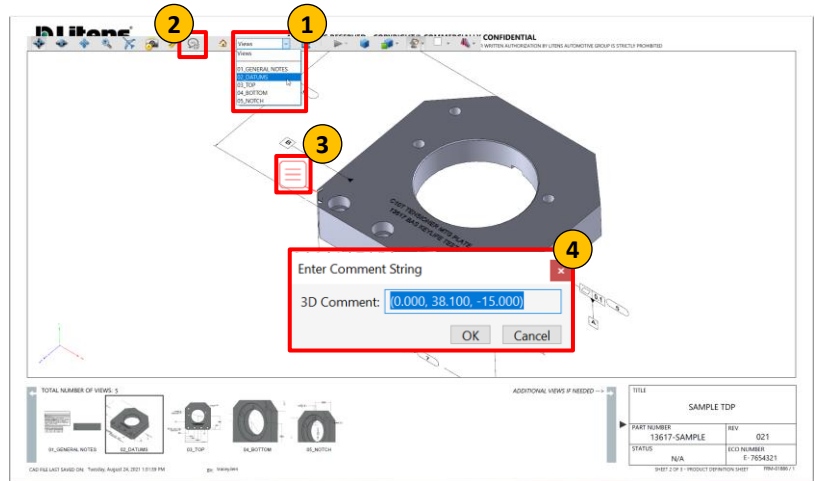


Adding Comments and Measurements in a 3D PDF

Adding Comments

You can add comments to a view:

- 1 Select the desired view
- 2 Click the Add 3D Comment button
- 3 Click on a location on the model to anchor the comment, and then click where you want to place it
- 4 Type the comment in the box that appears (by default, the comment is the anchor's coordinates). Click OK or press ENTER to save.



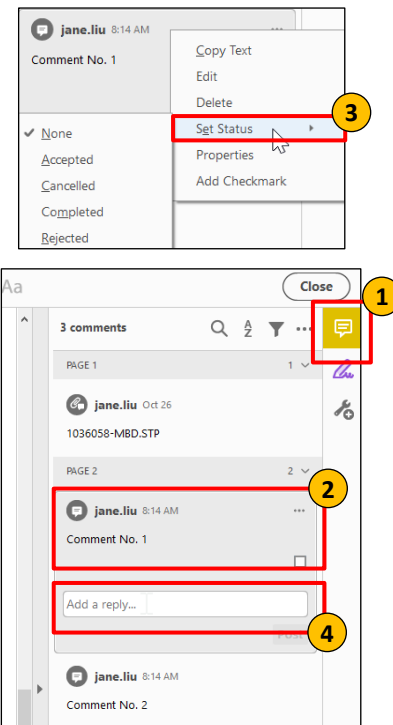
Additional Adobe Help Article: [Commenting on 3D designs in PDFs](#)

Reviewing Comments

The Adobe Comment Tool allows users to:

- Reply to a comment
- View previous replies
- Set status on a comment

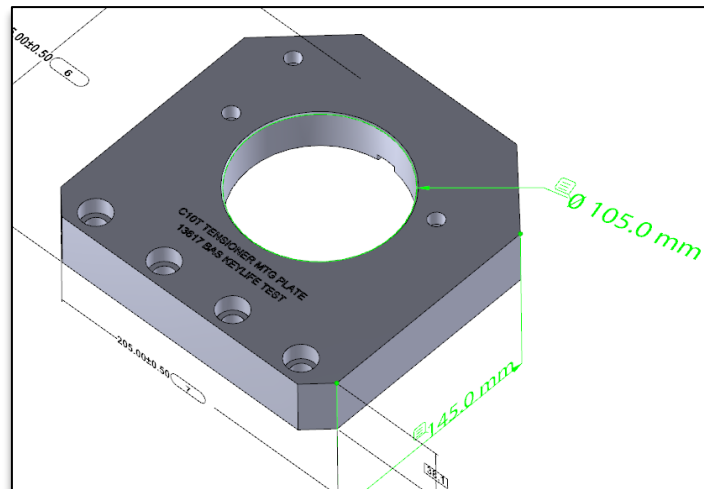
- 1 To **view comments**, click the Comment tool on the right side of the page. A list of all comments and replies will appear
- 2 **When a comment is selected**, the corresponding view will be activated, and the comment will be highlighted in the view.
- 3 To **set a status on a comment**, select 'set status' in the comment option menu. Next, select the desired status
- 4 To **reply to a comment**, select the comment and type in the reply in the text field. Click 'Post' to post the reply



Additional Adobe Help article: [Managing Comments in Adobe](#)

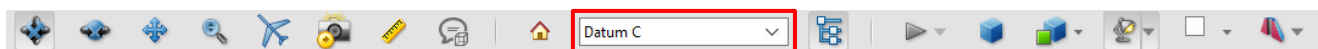
Adding Measurements

Measurements can be added and saved on the 3D model.



To add a measurement:

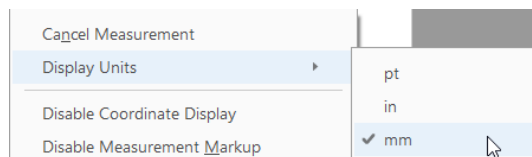
1. Select the view you want to make the measurement on.



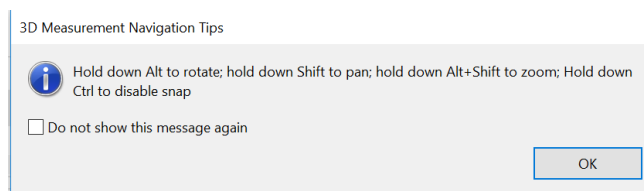
2. Select the 3D Measurement Tool

3. Change unit of measurement (optional; it uses the drawing's units by default)

- Right click and hover over *Display Units*
- Units can also be changed under Edit > Preferences > Measuring (3D)



4. If needed, use the keyboard shortcuts to view the model from a suitable perspective (the point/line/surface where you begin the measurement should be visible)



5. Enable the suitable Snap Enable(s) and Measurement Type required for the measurement.



6. Hovering over a feature will highlight it when measuring. Click on the feature(s) to take the measurement. Click again to place the measurement.

Additional Adobe Help Article: [Measuring 3D objects in PDFs](#)

Revision History

Refer to Compliant Pro for revision release dates.

Revision	Sections Changed	Changes Made
0	-	Initial Release
1	Title page	Released on C-Pro Added Copyright on title page, revision history
2	Recommended Adobe Settings 3D PDF Overview Viewing Attachments	Revised recommended Adobe Security settings Updated 3D PDF template Added more info+examples to Revision History Report
3	-	Added Chinese Translation of document