

How-To Guide

SAP 3D Visual Enterprise Author

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Markups and Measurements

Document History

Document Version	Description
1.0	First version

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1 Introduction

This guide describes how to do the following:

- Add, edit, and move markups
- Add distance and angle measurements
- Modify measurement settings
- Calculate area and volume

2 Markups

Markups are a means of adding information to the model by identifying and directing attention to the model's parts:

- There are a number of different markup types including detail views.
- The *Display Scene -> Settings -> Show Markup* command must be enabled for markups to be displayed.
- You can select, hide and show, and delete markups, and group and collapse their hierarchies in the same way as other objects.
- Markups can be moved, rotated, and scaled separately from the model. When rotating, scaling, or panning models, markups move in relation to the parts while remaining the same size.
- A model view is created when a markup is added. This is useful for viewing the scene and placing the markup at the same camera angle at a later stage. Markup model views display the original view of each markup and but can be updated to reflect any changes.

2.1 Adding a Markup

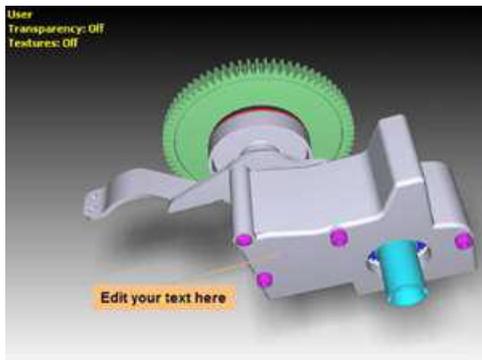
1. Open the *Realight Transmission.rh* file from *My 3D Models* tab page on *Files* panel. Display *Drawing* and *Text* and *Notes* toolbars.



2. Click one of the *Note*  markup tools.
3. Depending on the markup type you select, click the object you want to markup and drag the cursor to where you want to view the markup. The markup is displayed in the scene and its object node is displayed in the Scene tree.

Note

The way in which you create the markup depends on the type of markup it is. For example, if you are creating a text, point, arrow, or a line markup, click where you want to place the start point and drag to the leader length. If you are creating a circle note markup, click where you want to place the start point, drag outwards and inwards to set the circle radius, and click once more to set the leader length. For more information, see the SAP 3D Visual Enterprise Author help.



Note line markup

4. Experiment with adding lines and shapes such as adding manual thrustlines using the *Polyline* tool, to show animated objects moving out from the assembly.

Note

Use the various SAP 3D Visual Enterprise Author tools to help you view the scene in detail when adding markups. For example, use the *View to Active Object* command, and the mouse zoom and rotate tools.

As in many Windows applications, **CTRL+Z** will undo your last action and **CTRL+Y** will redo your last action.

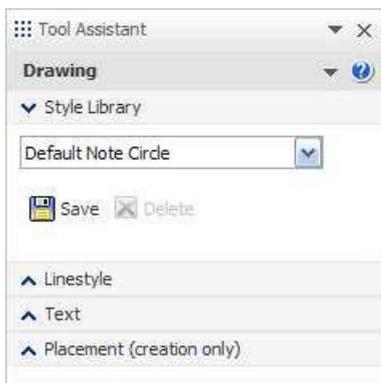
2.2 Editing and Moving Markups

5. Double-click a markup to display the *Properties* window.

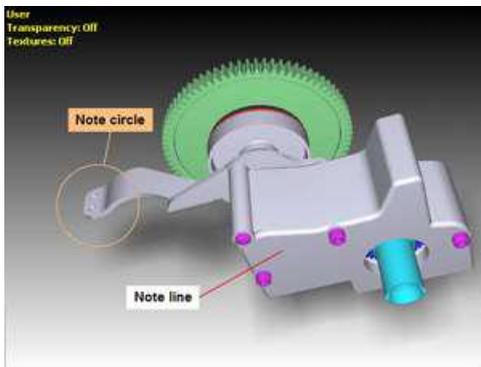


Note line markup *Properties* window

6. Edit the name and enter any metadata for the markup, then click *OK*.
7. Choose another markup and note that the *Tool Assistant* is displayed with the available settings for the selected markup.

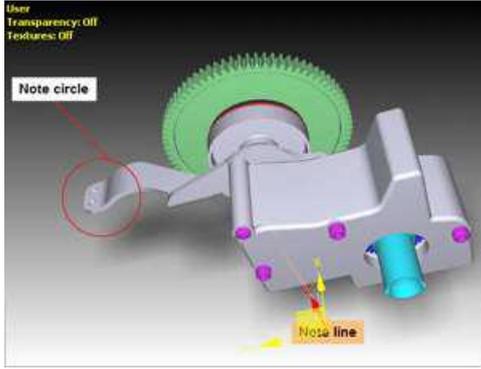


8. Edit the markup settings using the *Tool Assistant*. For example, choose whether to attach the markup's leader to a mesh or to draw it on top of the scene's objects.
9. Add another markup, for example, a note circle.



10. Edit the markup name and metadata as you require using the *Properties* window.

11. Use the *3D Editor* toolbar to move the markups.

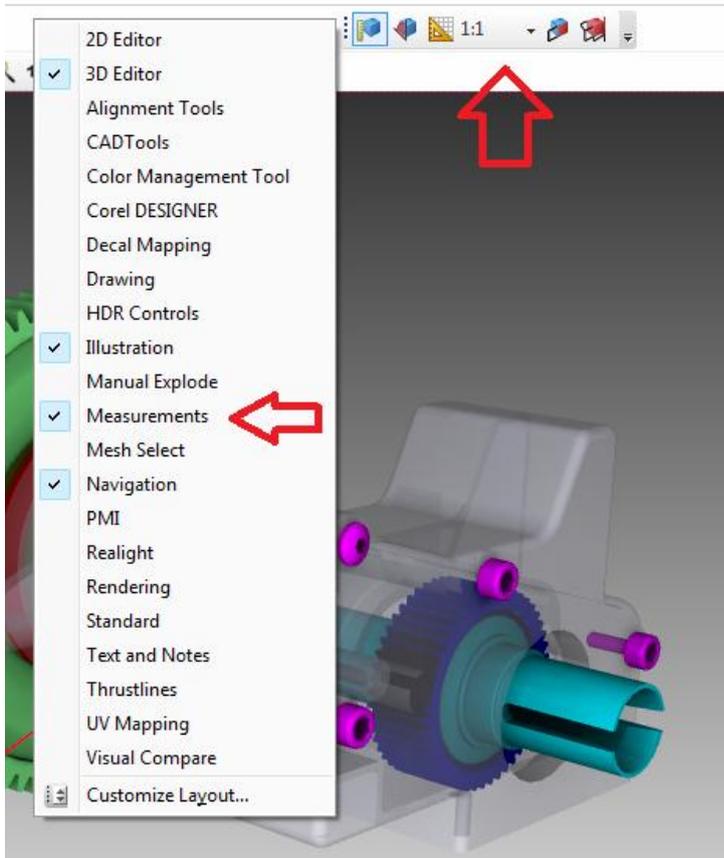


3 Measurements

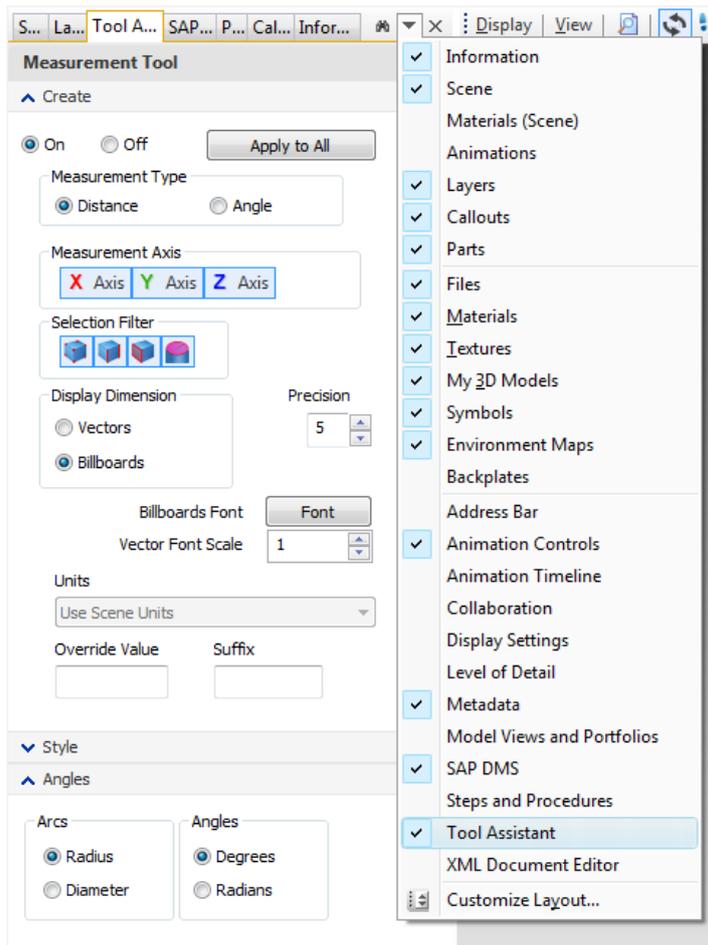
Measurement tools enable you to calculate the distance between objects and elements, and angles between elements.

To add a measurement, proceed as follows:

1. Load *Realight Transmission.rh* model from *My 3D Models* tab page on *Files* panel.
2. Display the *Measurements* toolbar:

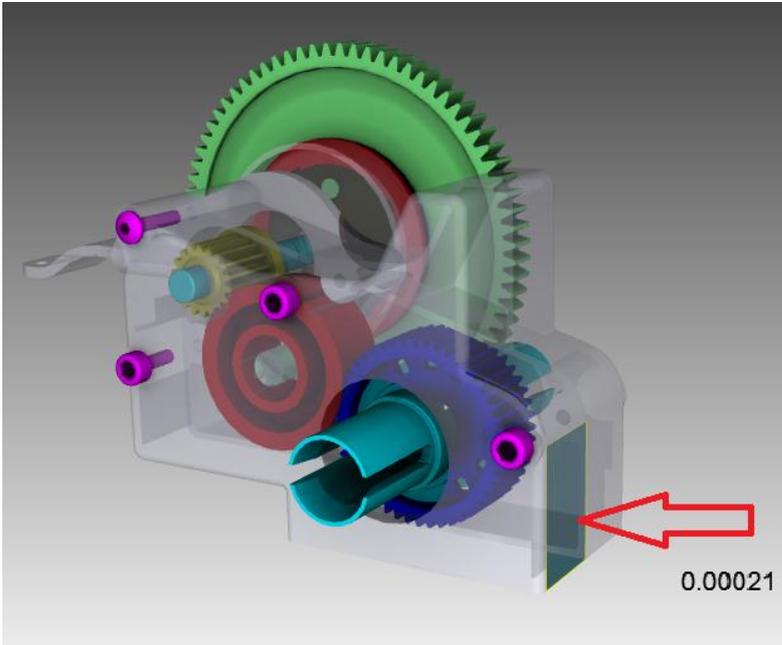


3. Make sure *Tool Assistant* panel is open:

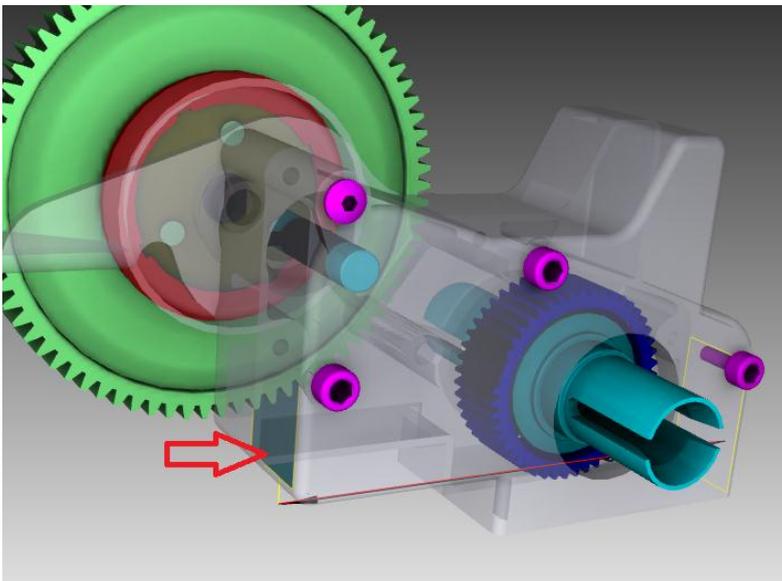


3.1 Adding a Distance Measurement

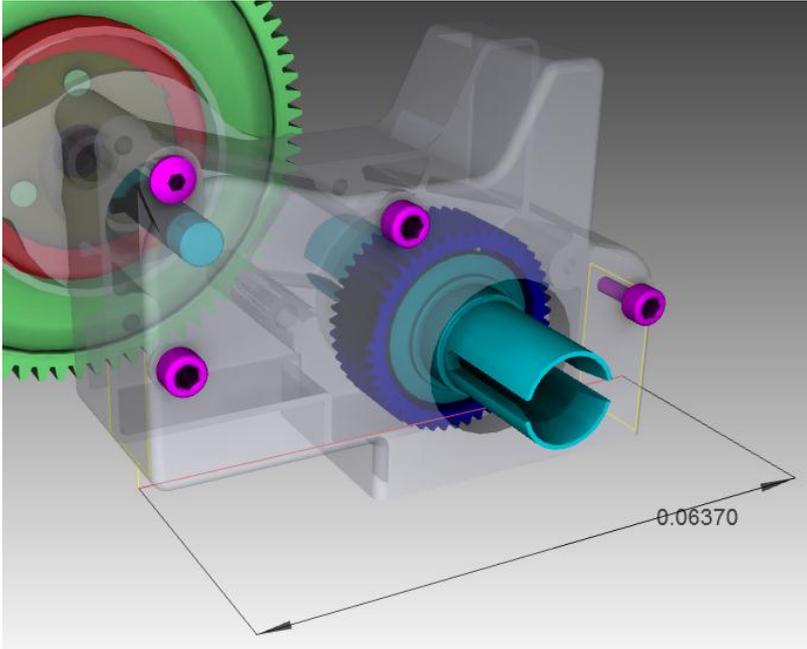
1. Click the *Distance* button on the *Measurement* toolbar. The *Measurement Tool* will appear on the *Tool Assistant* panel.
2. Orient model and select first surface of measurement:



3. Rotate a model and select second surface:



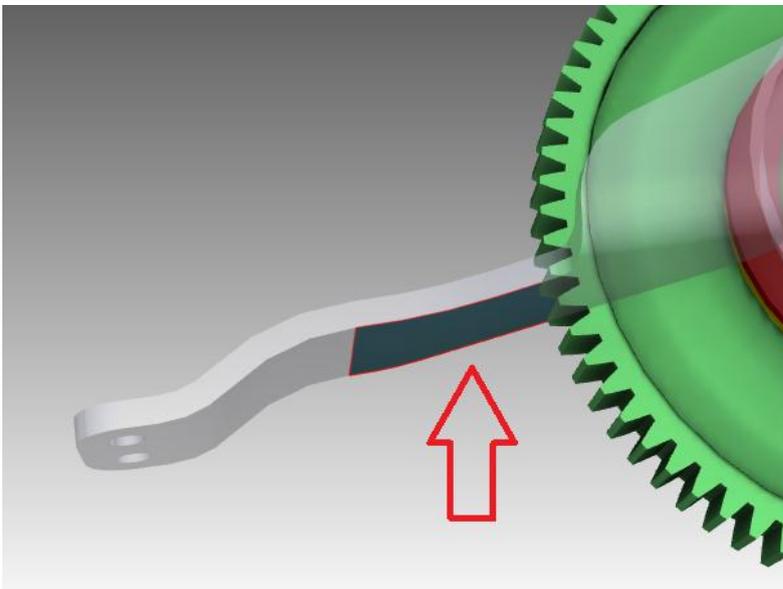
4. Drag the mouse cursor to place measurement line into correct position:



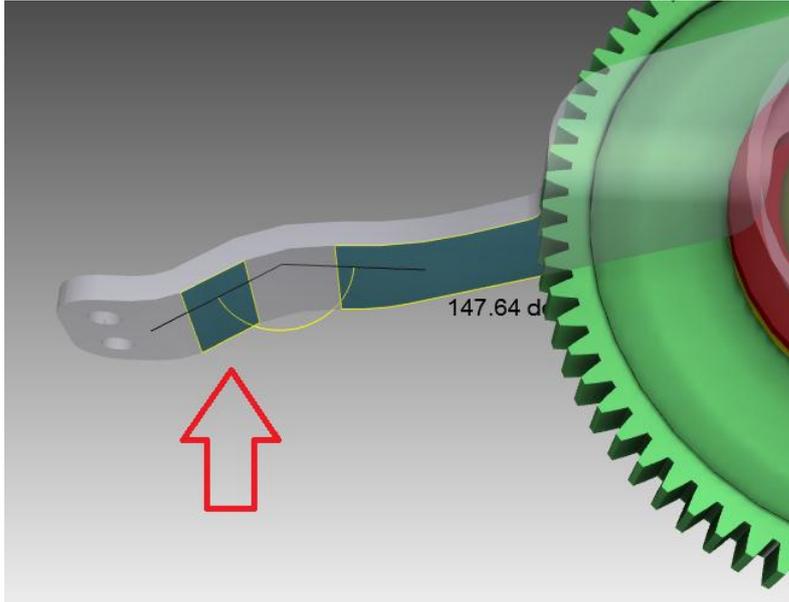
5. Deselect the *Distance* button on toolbar by clicking on it again.

3.2 Adding an Angle Measurement

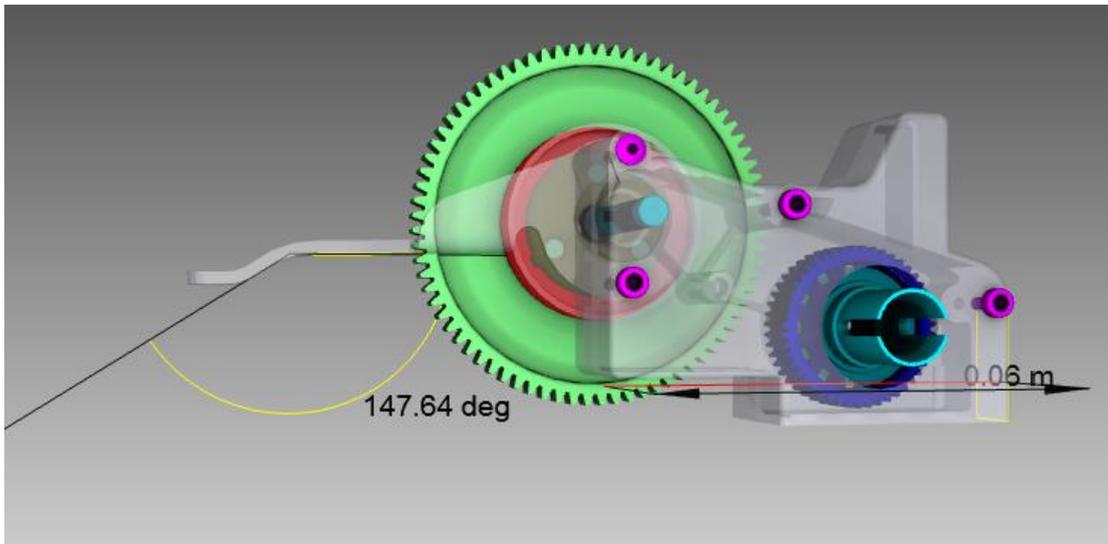
1. Click *Angle* on the *Measurements* toolbar.
2. Orient model and select a first surface of the measurement:



3. Select a second surface:



4. Adjust measurement position:



5. Deselect *Angle* button on toolbar by clicking on it again.



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