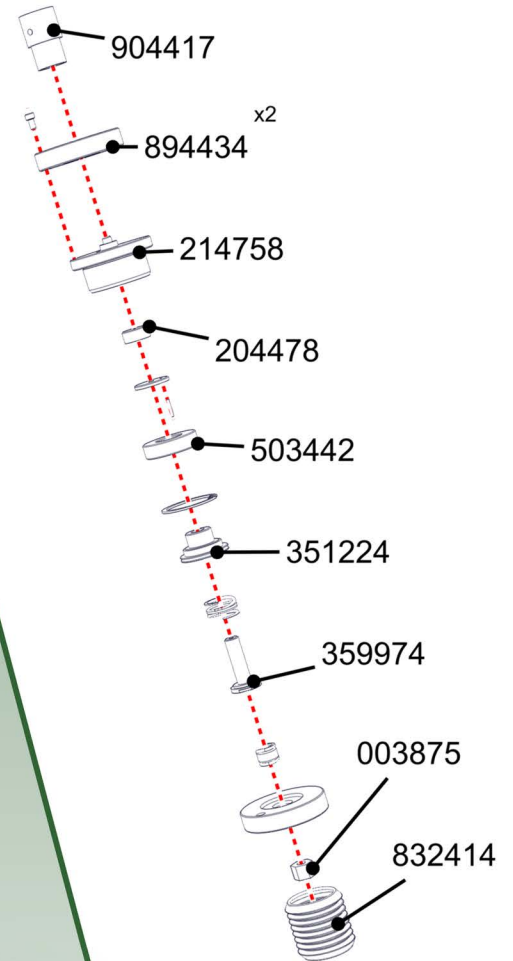
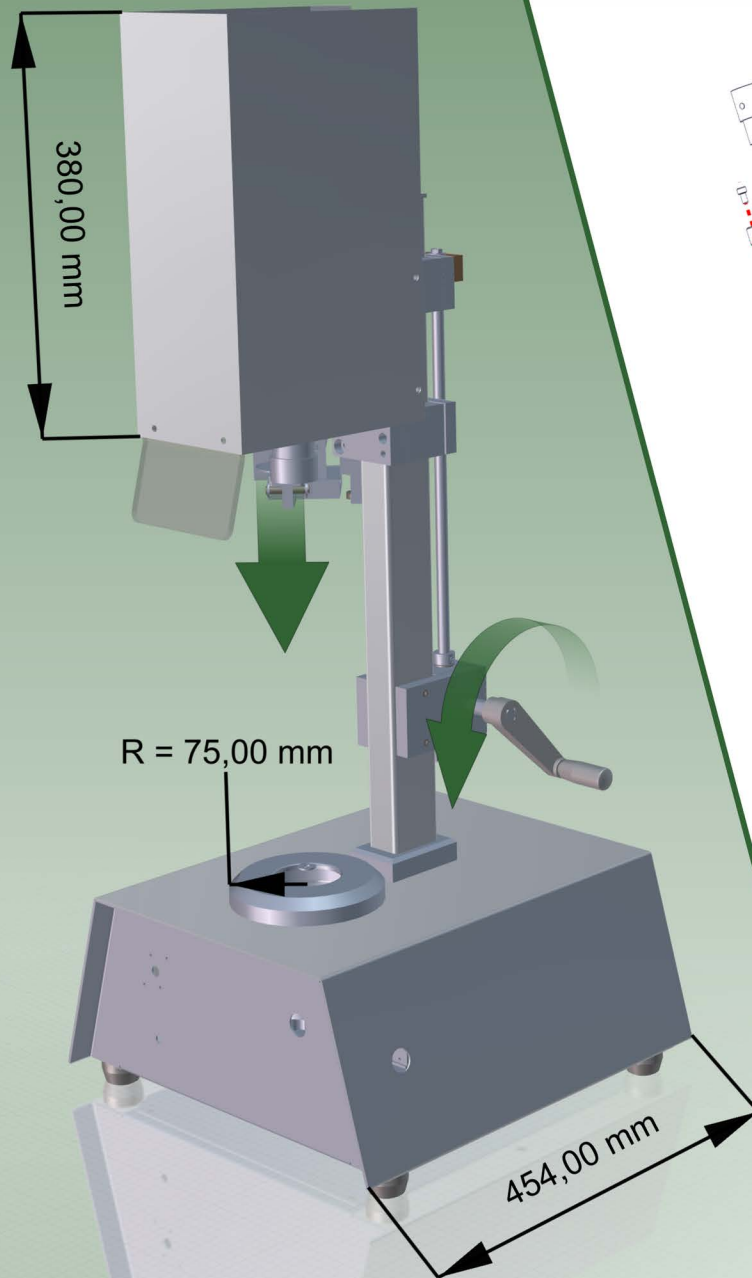


# MANUAL COMPOSER BASICS

Version 2021



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Note: SolidWorks<sup>®</sup> Composer<sup>™</sup> and 3DVIA<sup>®</sup> Composer<sup>™</sup> or Catia<sup>®</sup> Composer<sup>™</sup> offer the same functionality. The distinction of the names corresponds to the respective branding of Dassault<sup>®</sup> and SolidWorks<sup>®</sup>. The software packages differ in license handling. This has no effect on this manual. In the following, we will therefore only speak of Composer and this refers to both alternatives!

4rd edition, Oktober 2021

## Introduction

The Composer is an authoring tool for your PC that allows further processing of digital 3D data from CAD and other sources. Composer is easy to use and allows you to quickly and effortlessly create assembly and disassembly instructions, technical illustrations, interactive 3D animations, exercise materials, marketing materials, sales promotion tools and more. Thus, it serves for the creation of non-verbal communication media.

This manual serves as a supplement to a practical training course and describes all areas of this in such a way that they can be subsequently reproduced.

If, contrary to expectations, you find errors in the training document, please let us know so that we can improve the quality of subsequent versions of the manual. This also applies to suggestions that expand the scope or clarify terminology.

The manual is intended to teach you how to use the Composer software.

The functional scope of the software is extensive. Therefore, basic handling skills are taught in this manual. In addition, there are further possibilities to acquire specific knowledge:

More manuals from KRENKO (only German)

- **Composer Beginner**
- **Composer Animations**
- **Composer Tips & Tricks**

### The Online Help

Here you can find detailed information about settings, functions and rarely used command consequences.

In addition, the following Internet portals offer you additional help:

- **[Youtube Solidworks Channel](#)**
- 3DEXPERIENCE **<https://eu1-ds-iam.3dexperience.3ds.com/>**
- German CAD Forum **<http://ww3.cad.de>**
- Tips in KRENKO Composer Newsletter  
**<https://www.krenko.de/newsletter>**

### Note

The screenshots in this guide were created using Windows 10 and SolidWorks Composer R2021. Menus and windows may appear differently than on your computer and may differ in older and newer versions of Composer.

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## 9.3 Annotations

Annotations are text fields linked to one or more actors. They can contain various information of the actors or represent freely selected strings. The information is determined from the supplied CAD metadata.

The different types of annotations can be found in the multifunction ribbon under *Author > Annotations*.


### Label

To create a label, select  **Label** from the menu. If you now hover the mouse pointer over any actor in the viewport, you will see a preview of the label containing the actor's name. Left-click to link the label to the actor. With another click, you place the text field in the viewport.

You now have the option to place further annotations. If you do not want to do this, click on **Label** again to exit the mode or press the **Esc** key.


**Change positioning** | To move the annotation, click on the annotation with the left mouse button and keep the mouse button pressed. When moving, the line end point always remains aligned with the reference point of the actor.

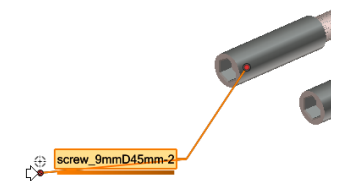
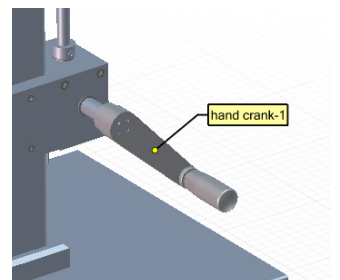
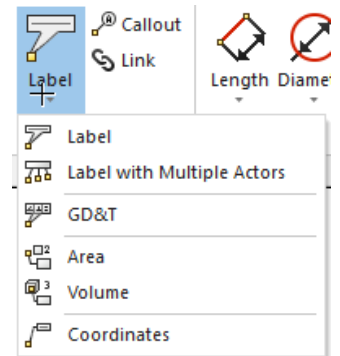
To move the reference point of the line, move the mouse over this point. Three small triangles mark the point. Click and hold the left mouse button. Now the point can be moved.

**Multiple entry** | There is also a possibility to link an annotation to several actors. Click on the symbol  with the left mouse button and keep the mouse button pressed. (The annotation must be selected for the symbol to be visible.) Now drag a new reference line from this circle and place it on another actor.

If you want to remove an additional reference line, drag the end point of the reference line back to this circle symbol and release the mouse button. The original reference line cannot be removed.

### Label with Multiple Actors

Annotations with multiple actors allow to link multiple actors to an annotation in a direct way. To do this, proceed in reverse order. In the viewport, first select the actors that you want to link to the annotation. Only then, select the  **Label with multiple actors** function from the menu and place the text field as usual. In the process, the connection points to the actors are set to the respective **Bounding Box Centre**. Most of the time the points have to be moved again.





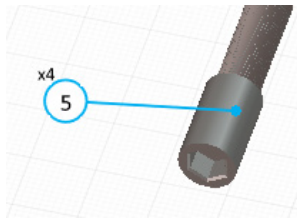
## GD&T

**GD&T** stands for Geometric Dimensioning and Tolerancing and contains information on tolerances and geometric properties. This annotation type can be useful for technical representations and can be populated in the properties with all common symbols for parallelism, concentricity and others.

## Callout

The callout is a special label for the creation of parts lists. It has some default settings that differ. These include the shape (circle) and the text in which the BOM ID of the actor is displayed.

The callout has an additional property: the callout exponent. With this, the quantity of the actor can be displayed next to the callout when the parts list is created.



## Label Properties

Labels have many properties that can be customized. Many of these properties lead into a new subject area. Here are only the most important.

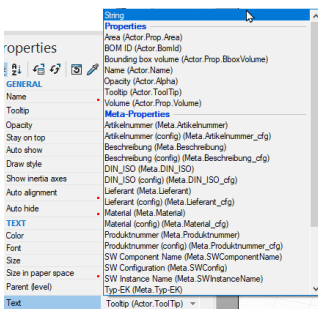
**Text > Text** | Labels can display properties and User-Properties of the linked actor. For explanations, see chapter *10 Detail View*.

By default, the name of the linked actor is displayed. This can be changed via the **Text** property in the actor's properties window. There you will find a list of Meta-Properties attached to the actor. Any of this data can be shown by the label.

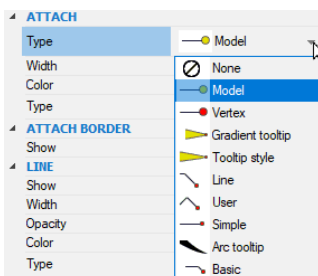
If you select **Text > Text > String**, you can write an individual text to be displayed in the annotation. An extra **Text string** property appears for this purpose. Here you can enter your text.

**Visual features** | The properties - if sorted by categories - are listed descriptively. In the **Text** property group, you will find all properties with which you can change the text color, font and size.

In the **LABEL** group you can individualize the **Shape** of the text field. You can change the shape-type, **Color** and **Opacity** of the text field.



The properties of the line are listed under **ATTACH**. There you can decide on an attach-**Type** and make further settings to design the annotation according to your wishes.






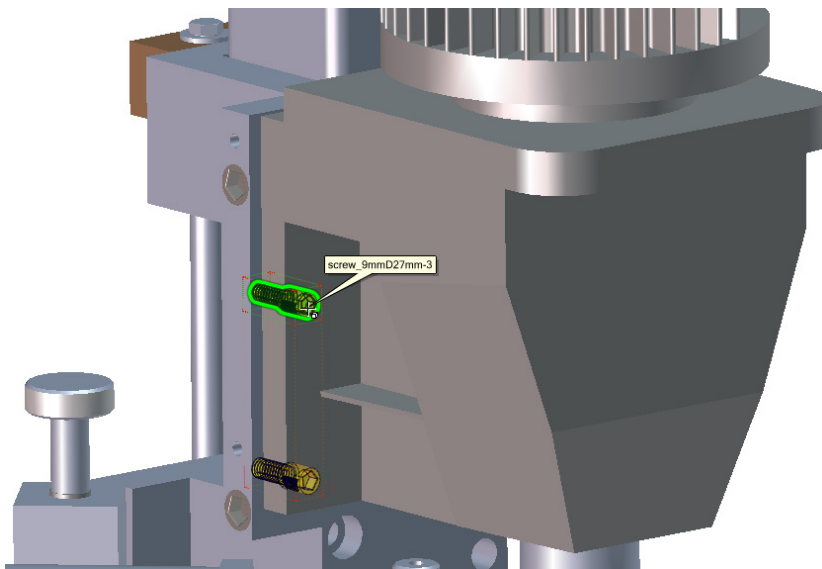
## Exercise 6

### Using authors


In this exercise, a disassembly instruction of the engine is to be created. For this purpose, the file **05 authors.smg** is required. The use of different authors, especially paths and polylines, will be practiced.


**Step 1 |** Call up the view **Standard** and hide the upper cover hood (**protective hood-1**) and disk (**protective disk-1**). Select the protective hood in the viewport and remove the check mark in the structure tree. Alternatively, call the context menu by right-clicking and select the  **Hide selection** command.

**Step 2 |** Now zoom in and align the camera according to the illustration to get a clear view of the motor mounting screws.



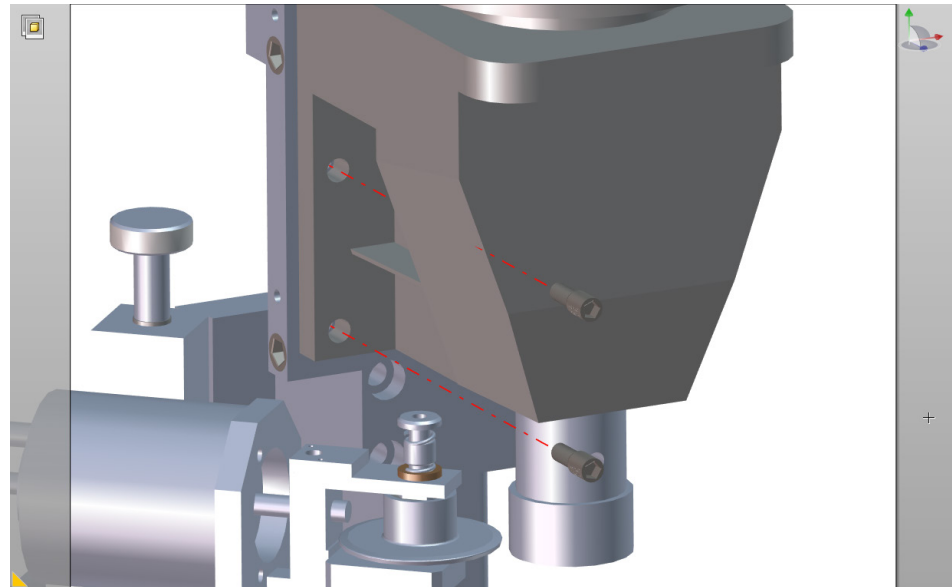
**Step 3 |** Mark both screws located one above the other and move them about 200 mm along the Z axis (blue axis). Exit the translation mode.

**Step 4 |** Switch to the **Author** tab in the multifunction ribbon. Select the lower screw and choose **Author > Path >  Create Non-Associative Path from Neutral** from the multifunction ribbon.

**Step 5 |** Select the upper screw and repeat *step 4*. Select the command ** Create Associative Path from Neutral**.

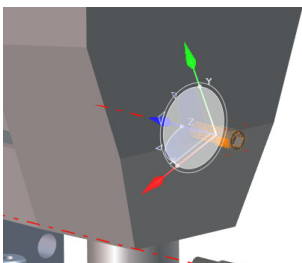
**Step 6 |** The properties of both paths must be adjusted. First select both paths (either in the viewport or under Collaboration). Now set the following properties: Line **Width** 0.5, Line **Color** Red. Uncheck the property **Stay on Top**. Finally set the properties **Extremity Start** and **End** to the value **None**.


**Step 7 |** Your viewport should now roughly correspond to the following figure. The top centerline is partially hidden by the motor geometry.

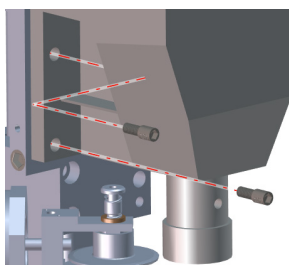


To prevent the line from being hidden, we will bend the associative line. To do this, we move the upper screw a little to the left. However, the local coordinate system of the screw is misaligned for this purpose.

Select the top screw and click *Transformation > Align Pivots > Align Pivot > With World Axis* in the multifunction ribbon. Move the screw along the red **X axis** by 100 mm to the left. Alternatively, press the **Alt key** and select a horizontal edge of the case. Then move the screw along this axis!

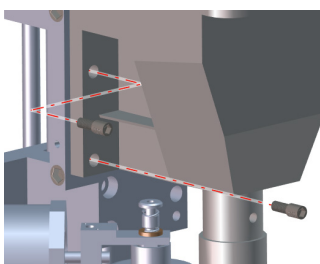


	+ or - on the displacement vector depend on the situation and the selected axis. Therefore, look carefully.
---	---



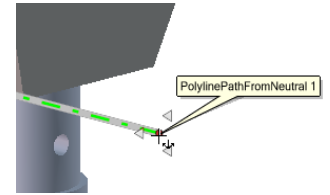
**Step 8 |** The associative path has automatically followed the new position of the screw, but still draws a straight line. Select the associative path and change the property **Construct Mode** to **Based on World Axis**. You now have access to **Axis order** property. Select **YZX** from the list to align the line correctly.

**Step 9 |** As can be seen in the figure, the kinked line is still in the geometry of the motor. The individual path sections of the associative path cannot be changed. In our example the first kink would have to be relocated in the direction of the bore so that it does not touch the geometry of the motor. To achieve this, we have to translate the upper screw a little bit back towards its original position. If you shift the screw by (-) 80 mm, the first bend point is no longer in the geometry.



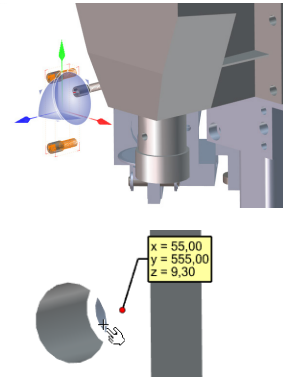
**Step 10 |** To ensure uniformity, also move the lower screw (-) 80 mm towards its original position. As you can see, the path remains unchanged. Only associative paths follow the new position of an actor. Non-associative paths do not have this property.

**Step 11 |** Find the endpoint of the non-associative path and hover over it. Hold down the **Alt key** and move the end point in the axis direction of the screw. Let the path peek out a bit from the head of the screw.

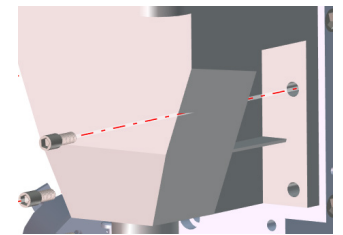


If you want to repeat this with the associative path, it will not succeed. Associative paths always map the length of the move vector. They can be moved, but not extended.

**Step 12 |** We create two center lines for the screws on the opposite side of the motor. First, we move the screws again along the blue Z axis. Choose approx. 250 mm.



**Step 13 |** To display the center lines, we will use **Polylines** this time. In the multifunction ribbon, click **Author > Markups > Polyline**. Zoom in on the hole of the screw, according to the illustration. While holding down the **Alt key**, move the mouse pointer over the edge of the hole until the start point of the polyline catches the back center of the circle. By a simple left click of the mouse you set the first line point.

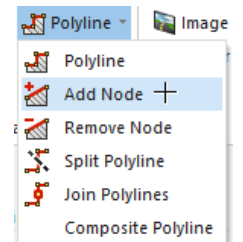


**Step 14 |** Use the pressed **Alt key** for the second point as well! Set the polygon end point to the center of the front edge of the screw head. Finish by clicking the right mouse button. Then shape the polyline according to the properties from **Step 6**.

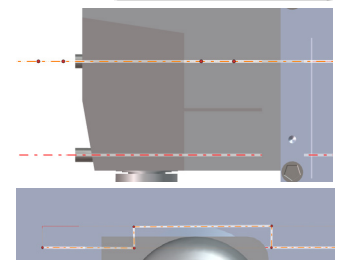
**Step 15 |** Extend the polyline at both ends without changing the direction of the line. To do this, hold down the **Alt key** while dragging. Repeat the last two steps with the other screw.


**Step 16 |** Now we will bend the upper polyline so that it does not run through the geometry of the gear!

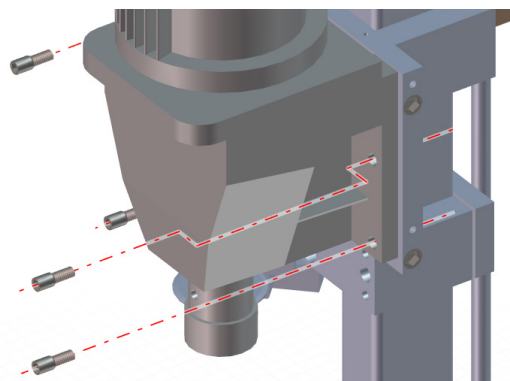
Select the polyline. Under **Author > Markups > Polyline**, apply the **Add Node** command and add 4 nodes to the polyline of the top screw, as shown in the figure!



Now use the compass and select the top view with the help of the green axis. Now you can move the inner points as shown in the adjacent picture. Here it is not important that the angles are exactly  $90^\circ$ . In the later perspective this is no longer recognizable.

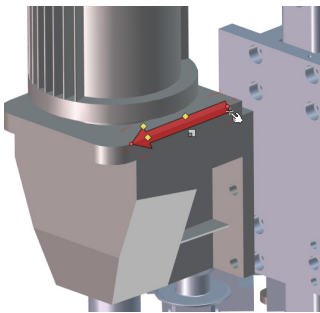


**Step 17 |** Align the camera as shown in the figure. Record your progress in the **Mounting Step 1** view by clicking .

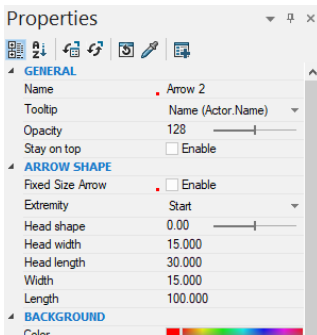


**Step 18 |** Call up your view **Standard** view again. Hide the upper protective cover and protective screen again. This time, also hide the screws and center lines, that were processed in the last steps.

**Step 19 |** The motor (**drive gear shaft**) is now visually no longer fixed by any screw. Mark the motor and the parts attached underneath, **centering head9M-1**, **centering head\_insert\_04-1**, **feather\_key\_DIN6885\_1\_A6x6x32-1** and **dowel pin\_ISO\_8752\_3x18-1**. Now move everything by 100 mm in the Z direction.



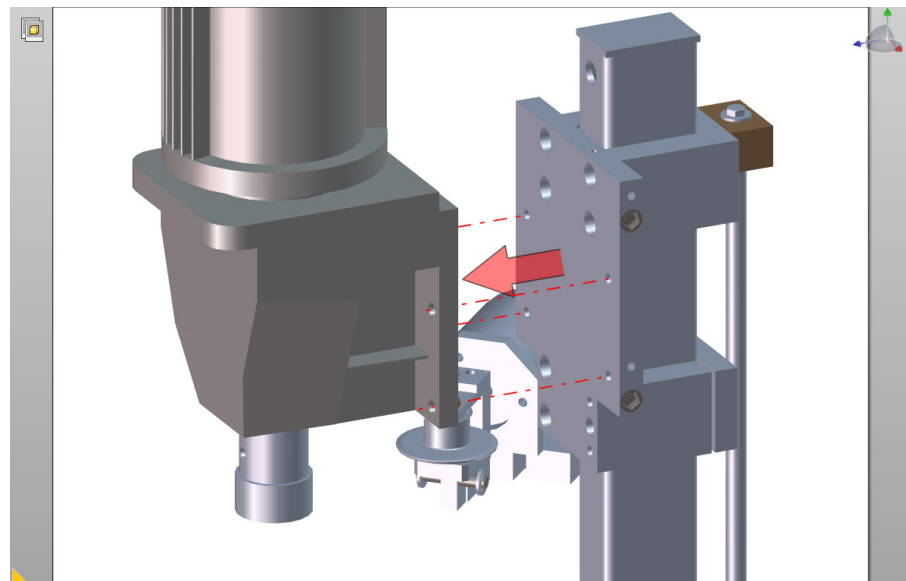
**Step 20 |** To indicate the direction of movement, we create an arrow. This should point in the direction of the global Z axis. First, click **Author > Markups > → Arrow** in the multifunction ribbon. Use the **Alt key** to align the arrow with the geometries. Find a body edge that runs in the direction of the global **Z axis** and position it by left-clicking and holding down the **Alt key**. With a second click you set the end point of the arrow and thus the desired length.



**Step 21 |** Change the properties of the arrow according to the illustration. As a guideline for the design of an arrow, choose a ratio of 1:2:1 for the properties **Head width, Head length, Width**.

**Step 22 |** Move the arrow between the motor and the mounting surface using the **Translate** function. Use the illustration as a guide. If the arrow points in the wrong direction, change the **Extremity** property to **End**.

**Step 23 |** Use the **Polyline** tool to create four center lines through the holes of the motor and the correspondent of the mounting plate. Apply the design defaults from **Step 6** for all lines. Then create a new view with the name **Assembly step 2**.



**Step 24 |** Save the project under the new name **06 Images.smg**.


## 9.4 2D-Text panel

A text field has similar properties to an annotation. They have the same setting options regarding shape, font and color as the annotations. You can find **Text 2D Panel** in the multifunction ribbon under *Author > Panels*.

Unlike annotations, text fields are not associated with actors when they are created and are therefore suitable for general notes. Text boxes are pure 2D actors and do not move when the camera rotates in space. They always remain in their position. Text boxes therefore also only have the option of being positioned in front of the scene or behind it (background).

To create a text box, click  **Text 2D Panel** and perform a single left-click in the viewport to place the text box.

You have the option to enter a text in the field. Actor-specific information can also be displayed in the 2D text field. However, this is a bit more complicated to handle than with an annotation.

In the input field of the **Text String** property, click on  the far right to enter a multiline text. An input window opens. To insert the properties of an actor, click **Insert property** and then click an actor. The properties of this actor will be displayed. If you select a property, it will automatically be inserted into the input field. If you want to add more properties, you have to repeat the process.

A text 2D panel can be visually linked to an actor, just like an annotation. The properties for this link can be found, as with annotations, under the **ATTACH** category.

If you want to place a note in the background, activate the **Background** property of your text field and set the **Freeze** property to **Freeze**. The text field is no longer selectable in the background and in the viewport.

If you want to undo the freeze, select the text field in the structure tree of the **Collaboration** tab and set the **Freeze** property back to **No Freeze**.

