Template Editor

Tekla Structures 11.0 Basic Training

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Contents

Contents i

1 Template Editor 3

1.1 Create a New Template from Scratch 3
Define template properties 4
Insert template components and objects 5
Edit component properties 14
1.2 Convert old Templates to new Format 16
Convert assembly_part_list.tpl template 16
Edit the template components 18
Edit template objects 19
Fit template components by the objects 22
Convert assembly_bolt_list.tpl template 22
1.3 Convert an AutoCAD File Into a Template 25
Create a drawing title and revision templates 25
Insert the AutoCAD file and edit its contents 25
Break the template into two separate templates 29
Create a "bill of materials" template 31

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1 Template Editor

In this lesson

You will learn how to work with Template Editor. You will create a new textual template from scratch. You will also create two graphical ones – one by converting an old template and one by converting an AutoCAD block into a new template. There are links to help files in the text. It is recommended to read the help file for more detailed descriptions.

What are templates?

Templates are descriptions of forms and tables which can be included in Tekla Structures. The forms can be graphical to be included in drawings as tables, text blocks, drawing headers, or ASCII text form to be used as reports. The contents of the template fields are filled in by Tekla Structures using the templates at run time. Templates are created and edited with **Template Editor**, which is a separate application in Tekla Structures and can be run also standalone.

1.1 Create a New Template from Scratch

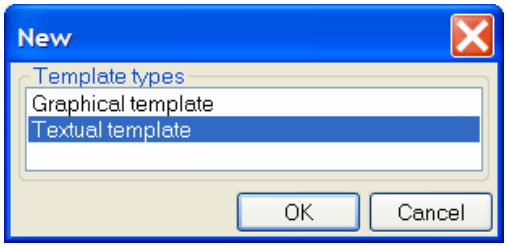
Start the Template Editor

Template Editor can be opened in Tekla Structures **Tools > Templates…** drop-down menu both in modeling and drawing editors or, in the drawing editor, by clicking on the corresponding icon "**Run template editor**".

Create a new template

1. We will first create a textual template to be used in report creation, which will list bolts, washers and nuts belonging to parts in an assembly. Create a new template by clicking on the **New** icon, or by selecting **New** from the **File** menu, or by typing **Ctrl + N**.

2. Select "Textual template" as the template type.



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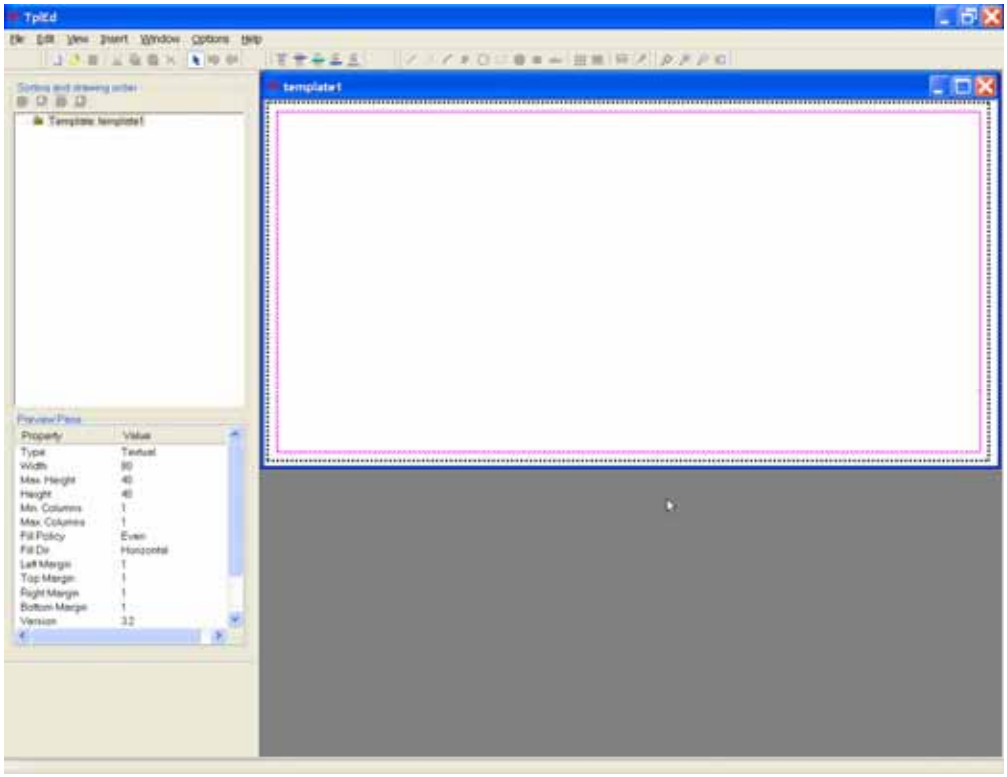
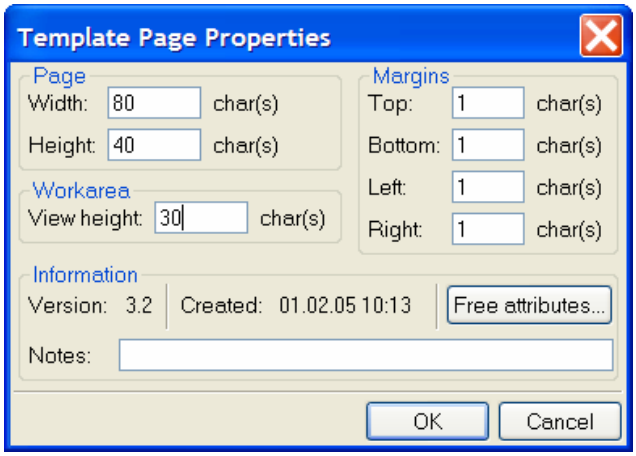
3. Click **OK**. A new empty template is created.



Define template properties

Template properties define the size, margins and column usage of the output template. Read more about template page settings in TempEd Help: Template Editor > Working with templates > Editing template properties > Edit page and margin settings

1. Double-click in an empty area in the template window to open the **Template Page Properties** dialog.



2. Set the **Width** to be 80 characters and the **Height** to be 40 characters.
3. Define **View height** to be 30 characters.
4. Click **OK**.
5. Select **Options > Preferences** from drop-down menu. Read more about preferences settings in TempEd Help: Template Editor > Menu Reference > Options menu commands > Preferences…
6. Select Millimeters as graphical units.

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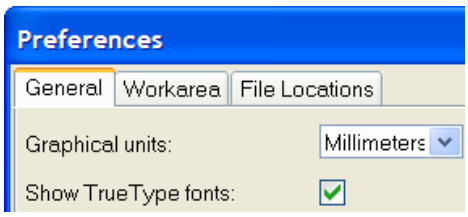

7. Click **OK**.

Now, let's save the template.

Save the template

1. Select **File > Save as…** .
2. Browse to the **Template** folder and save the template file with the name Assembly_part_bolt_list.rpt.

Insert template components and objects

The template layout is designed with template components. Template objects are then placed inside template components to add either graphical or textual data. The properties of components, objects and the template itself determine the final appearance. Read more about template components in TempEd Help: Template Editor > Working with template components .

In this example template we need the components **header, page header, 5 rows, page footer** and **footer** to form an assembly – part – bolt – washer – nut list.

Insert template components

1. Insert the template header and page header components by clicking on the "Header" and "Page header" icons on the **Component** toolbar.

2. Insert the row components. For each row, after clicking on the "Row" icon in the **Component** toolbar, select the **content type** (assembly, part, bolt, …) from the drop-down list and click **OK**.

Each row usually represents an object from the Tekla Structures database. The content type defines what kind of data can be read into the row. Only the object specific attributes are available for each content type.

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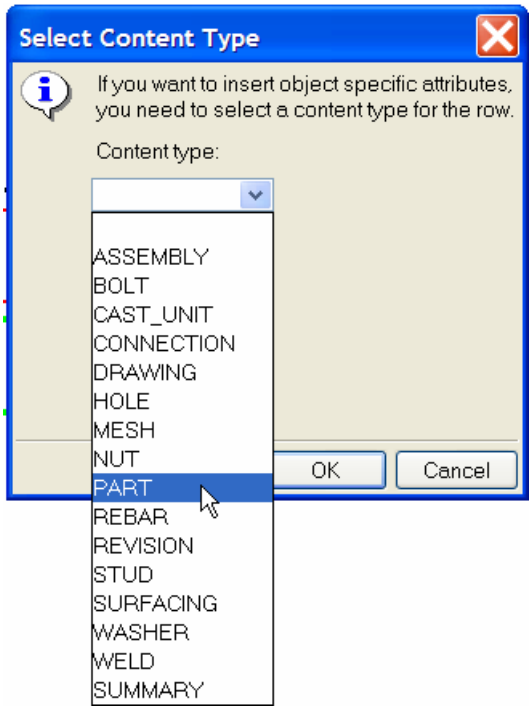
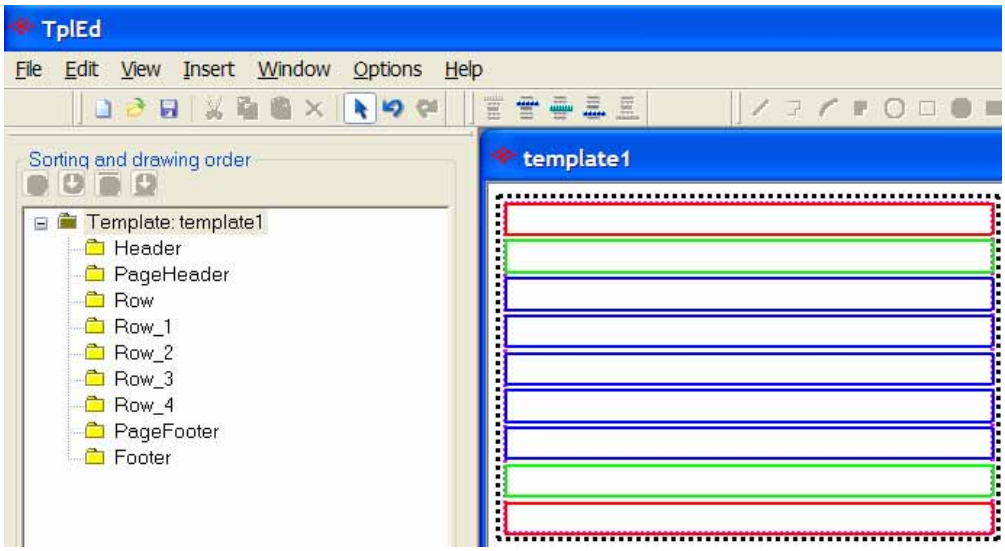


3. Insert the template page footer and footer components by clicking on the **Page footer** and **Footer** icons on the **Component** toolbar.

The components appear in the template work area and are listed in the content browser on the left.



Edit the template components

1. Next, give a descriptive name for the rows - **Steel_assembly, Part, Bolt, Washer, Nut** - by selecting the row in the content browser and typing the name.

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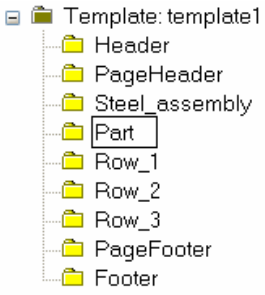
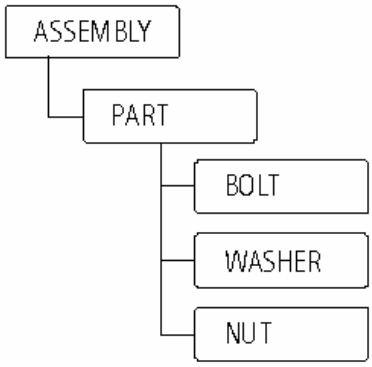
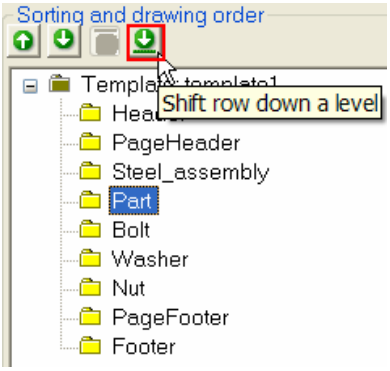


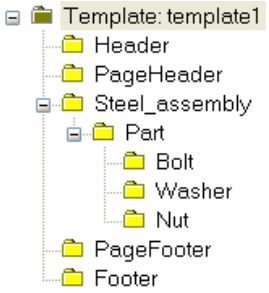
2. Then, define the hierarchy for the rows according to the actual hierarchy in the model. In the model, the bolts, washers and nuts are attached to parts, which in turn form an assembly. Read more about the hierarchy of template components in TempEd Help: Template Editor > Working with template components > Working with rows > Use row hierarchy .



Select the **Part** row and click on the **Shift row down a level** button in the content browser.



3. Then shift the **Bolt**, **Washer** and **Nut** rows below the **Part** row by selecting the row and clicking twice on the shift button.



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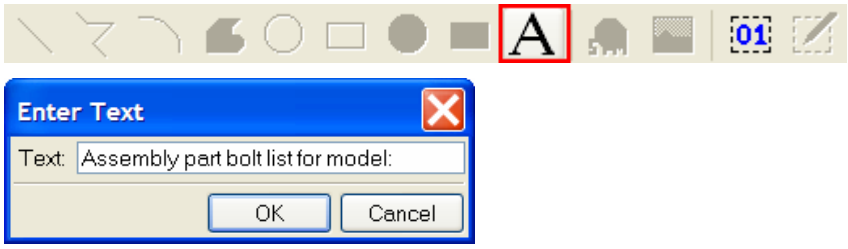
The whole hierarchical structure is needed for collecting the data from the model. For example, bolt data cannot be collected directly under assembly – a part row is needed in between. Each row has an option "**Hide in output**" in case you do not want the row contents to be visible in the final printout.

Insert objects into header

Next, insert the template objects inside the components. In textual templates you can only use text strings and value fields. Read more about template objects in TempEd Help: Template Editor > Working with template objects

1. First, insert text into the header by selecting **Text** in the **Insert** drop-down menu or by clicking on the corresponding **A** icon and typing the text in the **Enter text** dialog.

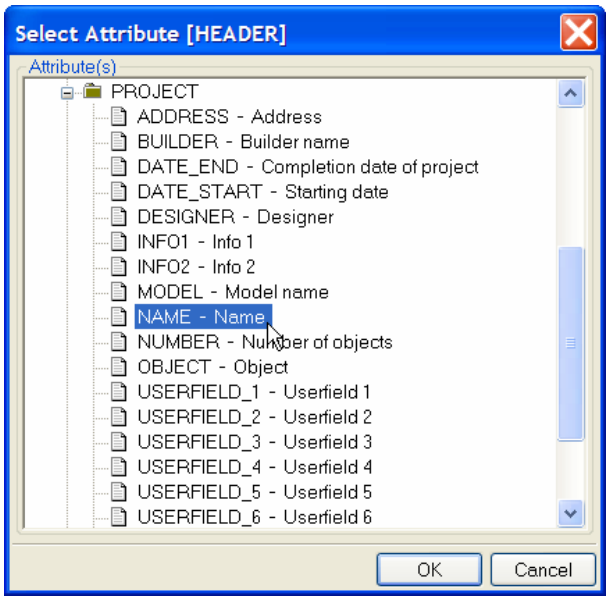


2. Click **OK** and place the text in the header.

3. Next put a value field next to the text by selecting **Value Field** in the **Insert** drop-down menu or by clicking on the corresponding **Value Field** icon and then point the position. Read more about value fields in TempEd Help: Template Editor > Working with template objects > Value fields.

The **Select Attribute** dialog opens.

4. Select the **NAME** attribute under the Project branch and click **OK**. Click on the **+** boxes on the left in the tree structure to open the sub-rows.



5. Double-click on the value field and type a descriptive name for the value field in the **Value Field Properties** dialog's **Name** field.

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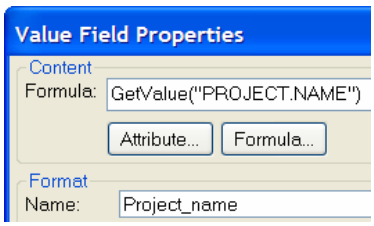
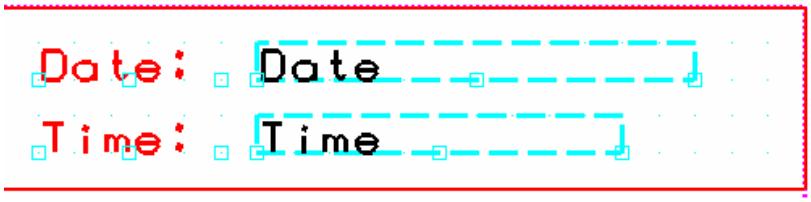
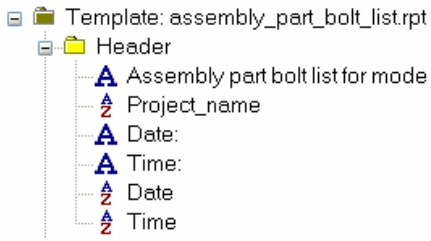


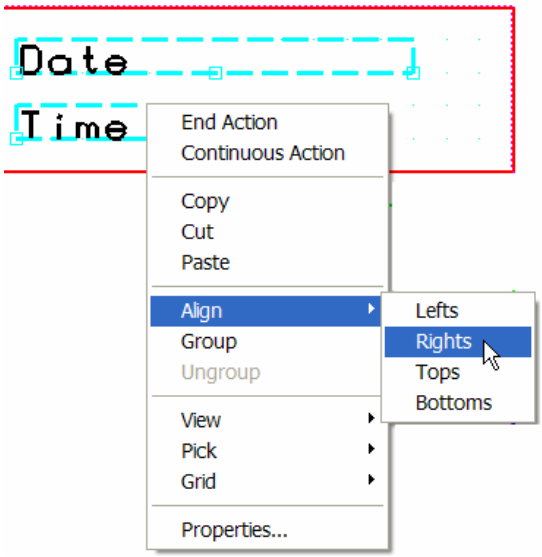
6. Add **DATE** and **TIME** value fields and corresponding texts to the right end of the header. The objects also appear in the content browser.





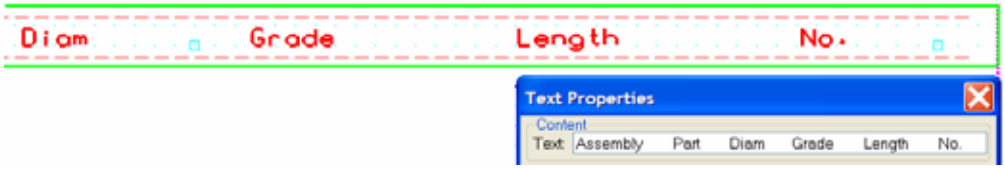
You can open several templates simultaneously and copy-paste objects from one template to another. The Value Field Properties dialog can be opened also by double-clicking on the field name inside the content browser.

7. Select the **DATE** and **TIME** value fields and align them using the right mouse button command **Align > Rights**.



Insert objects into page header

Insert texts into the Page Header according to the example below.



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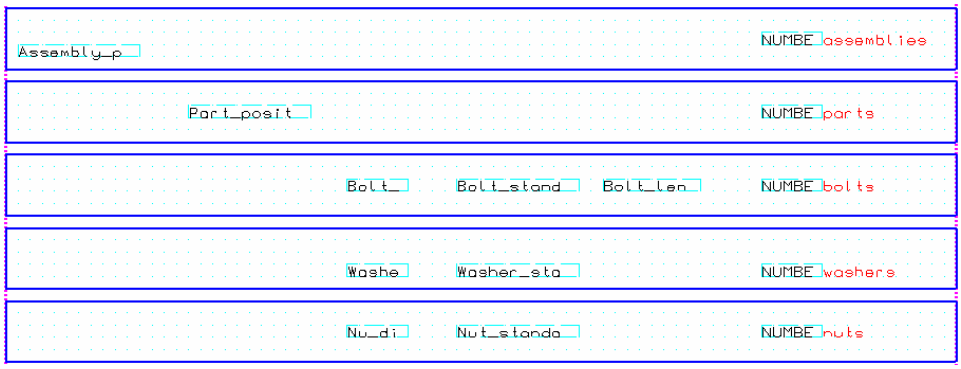
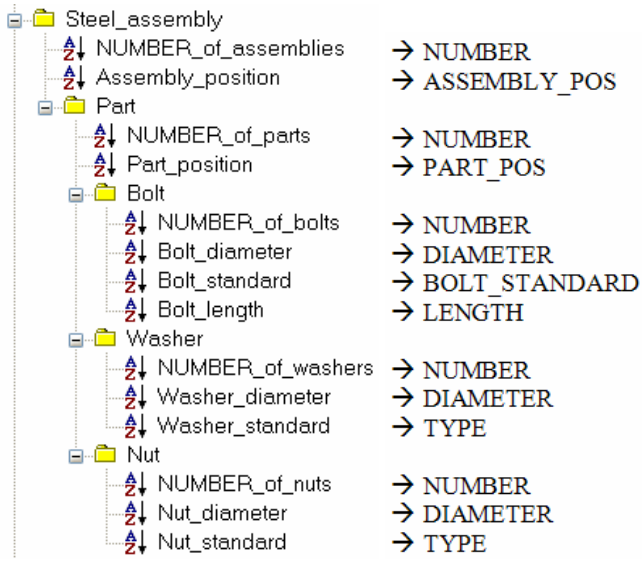
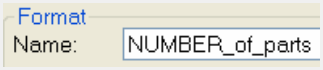
Insert objects into rows

Insert and align texts and value fields into the rows as shown below. In the **Value Field Properties** dialog, click on the **Attribute...** button to open the **Select attribute** dialog and then pick the attributes and give descriptive names to the value fields that appear in the content browser. Read more about attribute descriptions in Tekla Structures Help: System > Appendix D: Template fields.



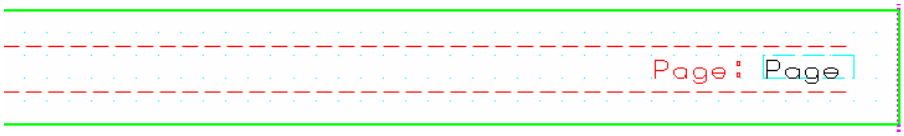


Note: the **Value Field names** must be unique in every row. For example, if you use the attribute NUMBER in different rows you should give a different name in the **Value Field Properties** dialog for each value field: NUMBER_of_assemblies, NUMBER_of_parts, etc.



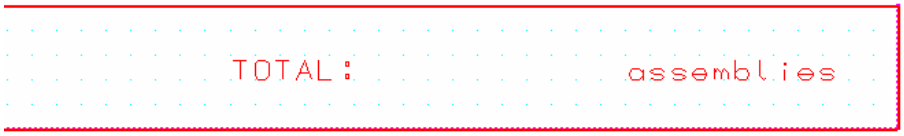
Insert objects into page footer

Insert texts and a value field "PAGE" into the Page Footer according to the example below.



Insert objects into footer

1. Insert texts into the Footer according to the example below.



Between the texts, add a value field which counts the total number of assemblies. Copy (Ctrl + C) the name of the value field to be counted from the content browser and open the **Value Field Properties** dialog.

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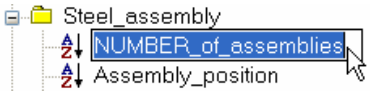
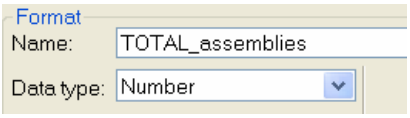
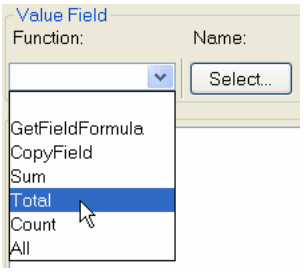


2. Type the name for the value field and set the data type to be "Number".

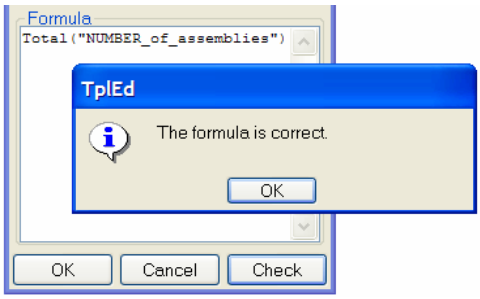


3. Click on the **Formula...** button to open the **Formula Contents** dialog.

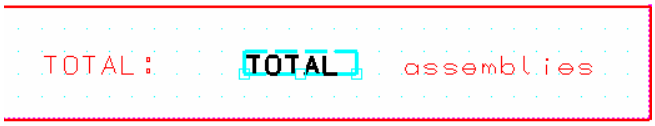
4. Select **Total** from the Value Field Function drop-down menu.



5. Paste the name of the value field "NUMBER_of_assemblies" inside the quotation marks (you can also select it from a list which opens by clicking on the **Select** button), then click the **Check** button to verify the syntax.



6. Click **OK** in the **Check** dialog.
7. Click **OK** in the **Formula Contents** dialog.
8. Click **OK** in the **Value Field Properties** dialog.



Sorting

When the value fields are placed inside the template components, the next step is to define the sorting of the fields and rows. The sorting is done at three levels:

- **Inside the value field** alpha-numerically ascending or descending (A to Z or Z to A). Sorting of value field distinguishes all different values of the field and a new row will be written to each different value.

- **Between the value fields** according to the **appearance order** in the **Content Browser** by sort order priority. The sort priority determines how several value fields affect the sorting of a row. Read more about value field sorting in TempEd Help: Template Editor > Working with template objects > Value fields > Set sort priority of value fields.

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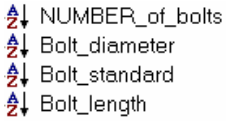


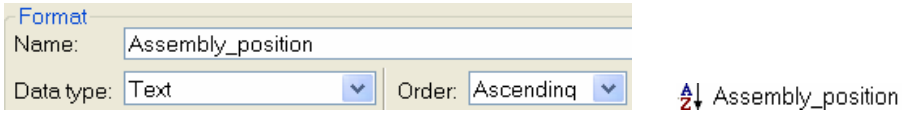
- The sort type of a **row** by sorting type values **Combine** and **Distinct** which separate or combine **identical** row contents. Read more about row sorting in TempEd Help: Template Editor > Working with template components > Editing component properties > Edit sort type of row.

Note: When you want to sum value field values, make sure that the sort type of the row containing the value field is **Combine**. This ensures that your will be outputting only summary lines instead of repeating lines with information on individual database objects. Read more about summing field values in TempEd Help: Template Editor > Working with template objects > Value fields > Sum field values automatically.

Define sort order inside value fields

Define first the sorting inside the value fields.

1. Double-click on the **"Assembly_position"** value field in the content browser or inside the template component and set the order to be "**Ascending**". The field values are sorted alphabetically from A to Z, which can be seen in the content browser as an arrow.

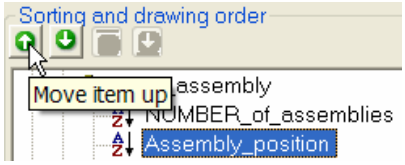


2. Repeat for the "Part_position", "Bolt_diameter", "Bolt_standard", "Bolt_length", "Washer_diameter", "Washer_standard", "Nut_diameter" and "Nut_standard" value fields in all rows.

Define sort order between value fields

Next, set the sorting between the value fields by giving the sort order priority in the content browser.

1. Select the **Assembly_position** value field in the Content Browser and click on the **Move item up** button. You can also drag and drop the value field into a new location.



The assemblies become sorted first by assembly position number, then by amount of assemblies.

2. Repeat for all value fields in the following rows as shown in the example below:

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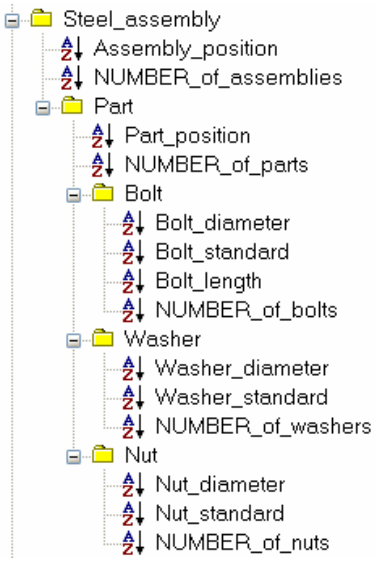


Define sort order between rows

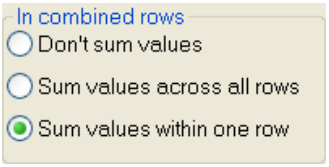
If all the rows have identical values in all value fields that are used in sorting, the rows are called "Duplicate lines". If you want to output only one line instead of outputting a line for each duplicate object, set the row sort type to be **COMBINE**. Then, for example, 5 pieces of assembly A/1 is listed in one row instead of 5 rows.

1. Double-click on the "Steel_assembly" row in the content browser or the corresponding component border to open the **Row Properties** dialog.
2. Set the **Sort type** to **Combine**.

3. Click **OK**.
4. Repeat for all other rows.

Summing

When the row's sort type is set to "Combine", the value field can be summed. Value field summing has three options:



- **"Don't sum values"** gives the value of an individual field.
- **"Sum values across all rows"** gives a total sum of all identical value fields in the whole template, independent of the hierarchical structure of the rows.
- **"Sum values within one row"** gives a sum of identical value fields inside the hierarchical structure.

Define summing of NUMBER value fields

First, define the summing of the number of assemblies.

1. Open the "NUMBER_of_assemblies" value field properties dialog.
2. Set the summing option to **Sum values across all rows**.
3. Close the dialog by clicking **OK**.

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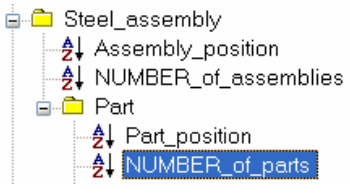
4. Next, set the summing of the number of parts inside one assembly. Because the part row is hierarchically under the assembly row in the Content Browser, you must use the summing option **Sum values within one row** to get the number of identical parts inside one assembly. (If the option **Sum values across all rows** were used, the number of identical parts would be multiplied with the number of identical assemblies.)



5. Define the summing of the number of bolts, washers and nuts using the **Sum values within one row** summing option.

Edit component properties

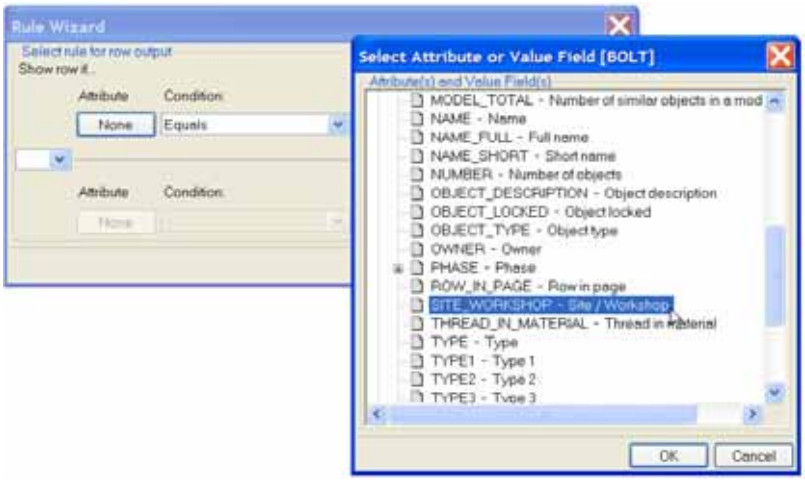
Rules

The row rule is used if a row is to be output only under some special conditions. Read more about rules in TempEd Help: Template Editor > Working with formulas and rules.

In this example template, we want to list only workshop bolts and leave site bolts out. Therefore, a rule is needed to separate them and output only the shop bolts.

1. Double-click on the **Bolt** row in the content browser or the corresponding component border to open the **Row Properties** dialog.
2. Click on the **Wizard** button to open the **Rule Wizard**.

3. First, select the attribute by clicking on the **None** button, which opens the **Select Attribute or Value Field** dialog.



4. Select the attribute **"SITE_WORKSHOP"**.
5. Click **OK**.
6. Set the Condition to be "**Equals**".
7. Set the Value to be **"Workshop"**

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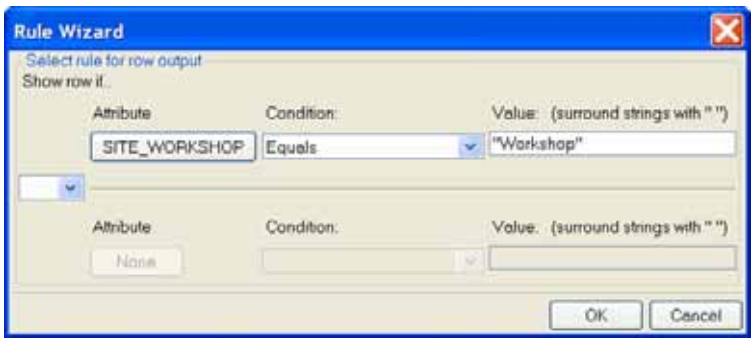
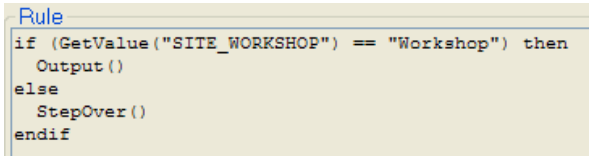


8. Click **OK** in the **Rule Wizard** dialog.

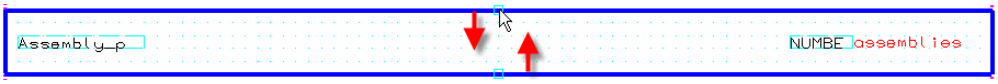
The rule is generated into the Rule box. Read more about the Wizard in TempEd Help: Template Editor > Working with formulas and rules > Row rules > Rule Wizard dialog.



9. Click **OK** in the **Row Properties** dialog.
10. Repeat for the Washer and Nut rows.

Height

Next, edit the template component heights to fit the contents by selecting the component handle in the middle and dragging them.



The final template rows should look like this:

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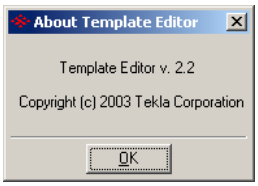
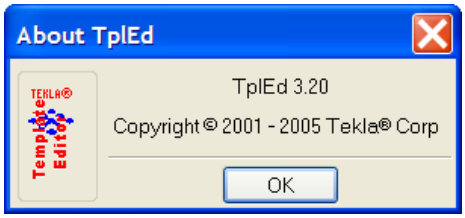
1.2 Convert Old Templates to New Format

When you open an old template file, the Template Editor automatically converts it to the new format. In the converted template, you need to do some editing: define the hierarchy, rules and sorting of the rows and fields. Read more about Template conversion in TempEd Help: Template Editor > Template Conversion.

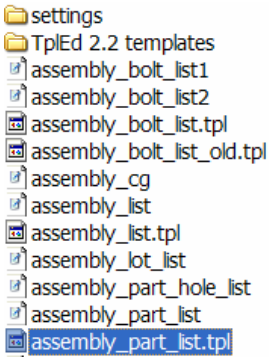




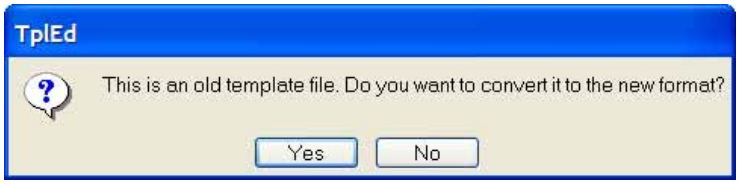
Convert assembly_part_list.tpl template

1. The converting process starts with opening the file to be converted. Select **File > Open** or click on the corresponding icon.

2. Select the file **assembly_part_list.tpl** from the browser. It should be located in the **Template** folder of your environment folder of the Tekla Structures program folders.

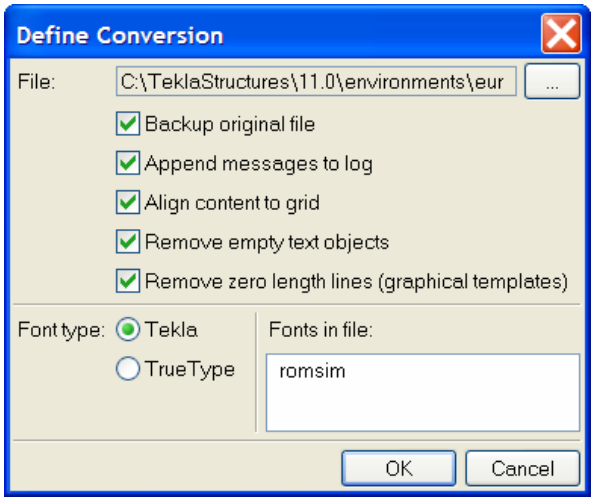


Template Editor automatically recognizes an old file and prompts you to convert it to the new format.



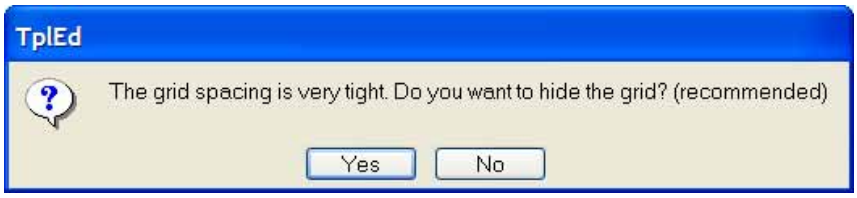
3. Click **Yes**.

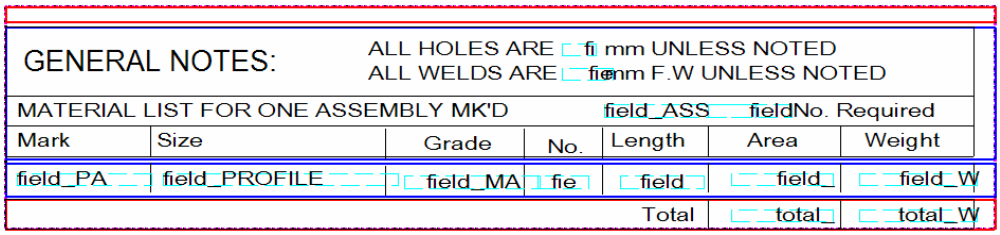
4. Define the conversion options.

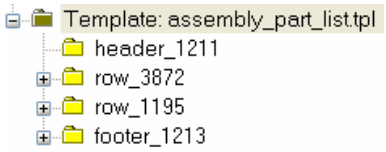


Always back-up the original file for later usage.

5. Click **OK**. The converted template is opened with an info dialog about the grid spacing and a list of warnings is displayed. Read more about warnings in TempEd Help: Template Editor > Template conversion > Template conversion warnings.







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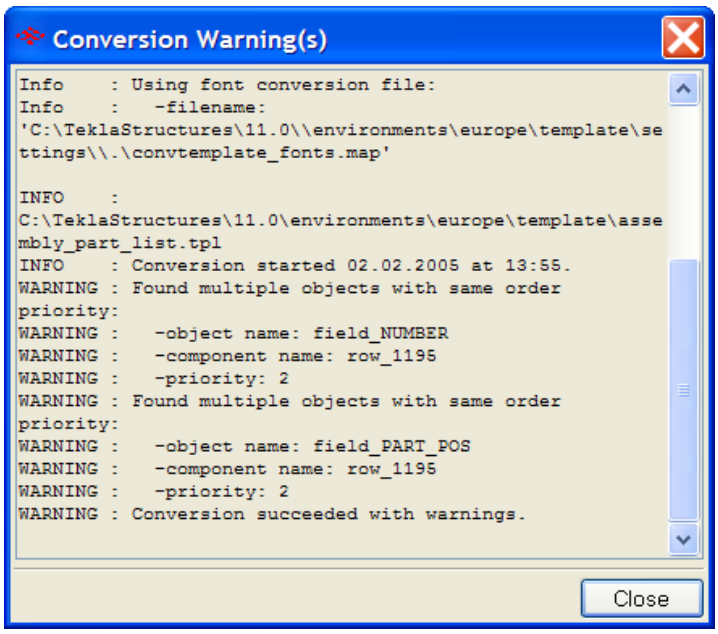
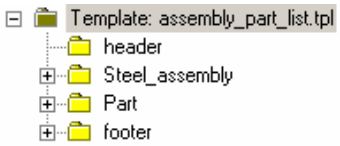
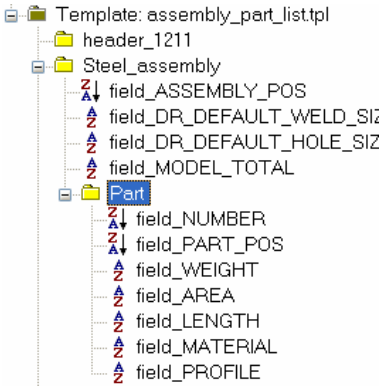


Edit the template components

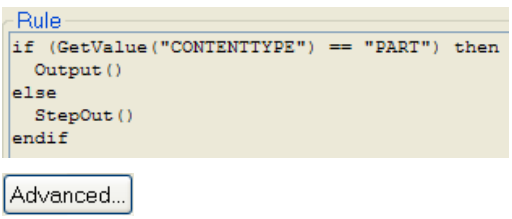
1. Rename the template components using descriptive names. See previous section for the naming procedure.



2. Define the hierarchy of the rows by shifting the part row down a level. See the previous section and Appendix I on how to define the hierarchy.



3. Edit component rules. As the content type of the row is now defined in the **Row Properties** dialog, rules are no longer needed to define it. Therefore, the unnecessary rules can be removed. Open the **Row Properties** dialog and click on the **Advanced…** button.



4. Select the rule and delete it.

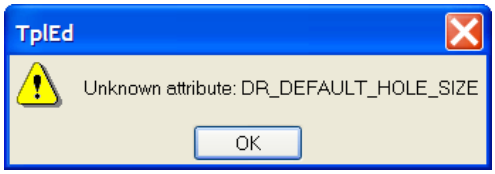
5. Click **OK** in the **Rule Wizard** dialog.
6. Click **OK** in the **Row Properties** dialog.

Edit template objects

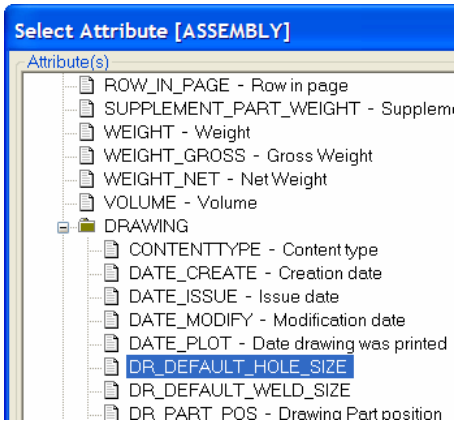
Value fields

Check all value field contents: some of the attribute names are different from those in the Template Editor version 2.2, and the formula structure has changed as well. Read more about attribute names in TempEd Help: Template Editor > Template conversion > Troubleshooting conversion > Mapping attribute names and properties in template conversion.

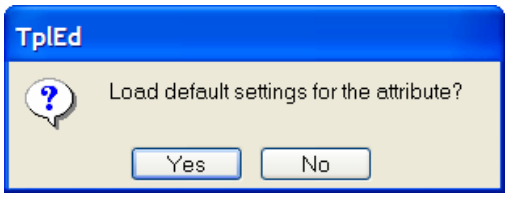
1. Open the value field properties dialog for each value field and check the attribute name. A warning is displayed if the attribute is unknown.



2. Open the list of attributes by clicking on the **Attribute…** button.
3. Select the correct attribute from the list and click **OK**.



4. It is advisable to load the default settings for the attribute as prompted on the dialog.



5. Define the **sorting** of the value fields after conversion, where needed. See the previous section for detailed sorting instructions. The same sorting rules apply to converted value fields as to those created by the user:

- Check the alphabetical sorting of the value fields in the content browser and change the ascending / descending values if needed.
- See the appearance order of value fields in the content browser and shift them to the correct location. The current order is converted according to the sorting order in the old template.
- Also check whether similar rows need to be displayed.

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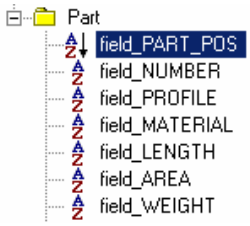
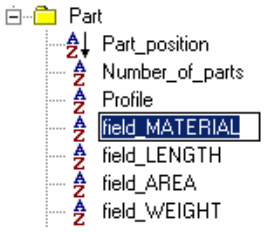
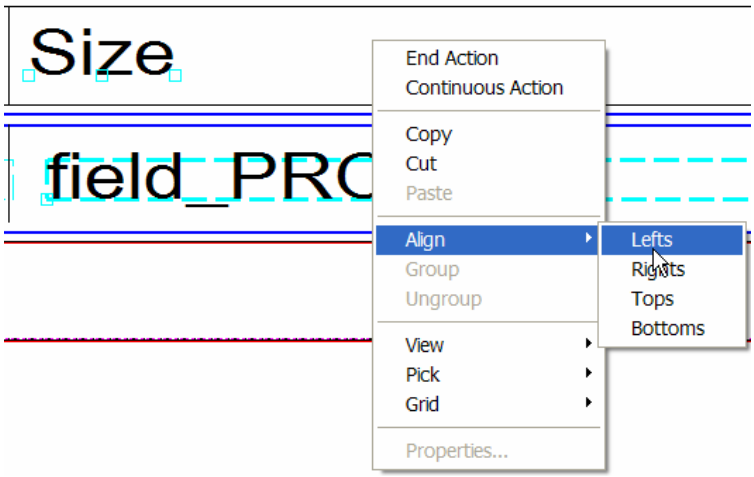


6. **Rename** the value fields to more descriptive ones. After conversion, the names appear in the format field_ATTRIBUTE_NAME. Keep in mind that the value field names must be unique.



You can rename the objects directly in the content browser, without opening the properties dialog.

7. Align the value fields with text objects. First, select the objects and then right-click and **Align > Lefts**.



8. Go through the summing value fields in the footer. Change the **formulas** to have the correct **value field names** inside the brackets and quotation marks. See the previous section for more information.

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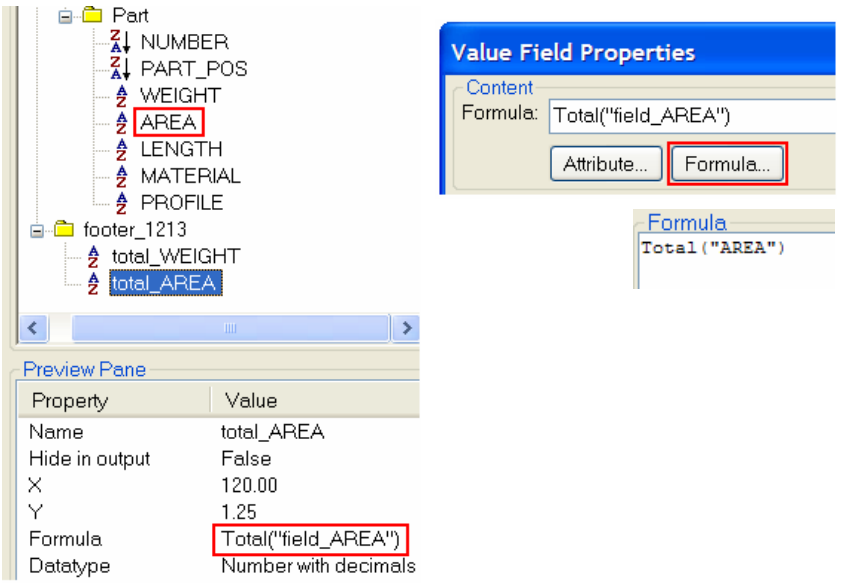
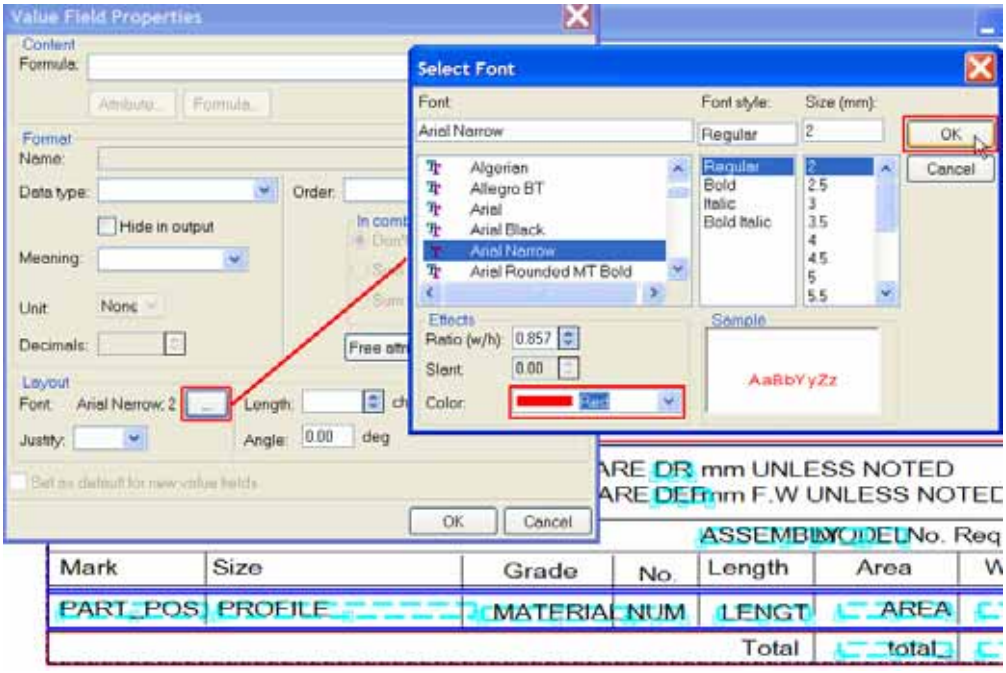


9. Next, change the color of the value fields. Select all value fields by picking them while holding down the **Shift** key.
10. Right-click and select **Properties…** .
11. Click on the **Font** button.
12. Change the color to red.



13. Click **OK** in the **Select Font** dialog.
14. Click **OK** in the **Value Field Properties** dialog.

Graphical objects

Next, edit the colors of all border lines in the template.

1. Select all lines by picking them while holding down the **Shift** key.
2. Right-click and select **Properties…** .
3. Change the color to yellow.

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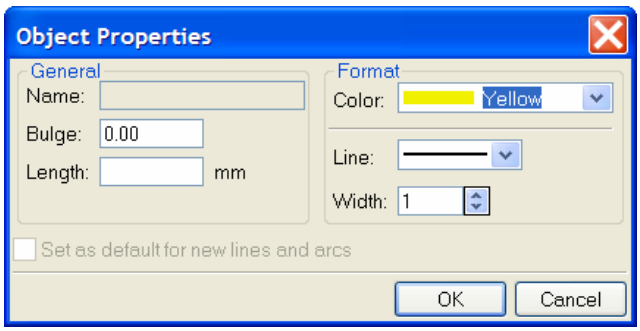
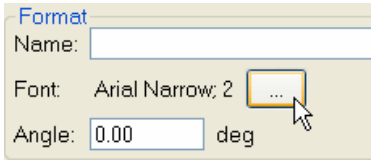


4. Click **OK**.

Text objects

Next, edit the colors of all text strings.

1. Select all text strings of the same font size by picking them while holding down the **Shift** key.
2. Right-click and select **Properties…** .
3. Click on the **Font** button.

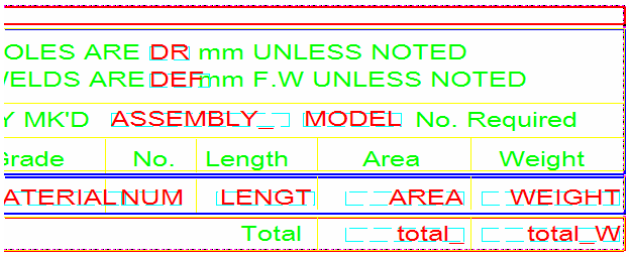


4. Change the color to green.
5. Click **OK** in the **Select Font** dialog.
6. Click **OK** in the **Text Properties** dialog.

Fit template components by the objects

The right side of template components can be fitted by the contents. Select the menu command **Edit > Crop > Template Right Side**. Empty spaces are cut off from the right side.

The finalized template should now look like the example below:



Convert assembly_bolt_list.tpl template

The second example of file conversion has an additional hierarchy definition for a missing object branch.

1. The converting process starts again with the opening command.

2. …and selecting the file to be converted: this time the file **assembly_bolt_list.tpl**.

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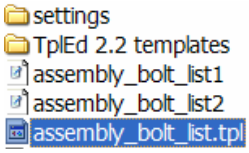
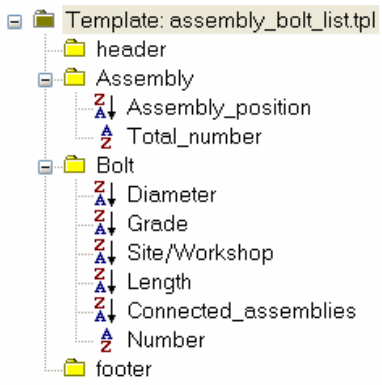
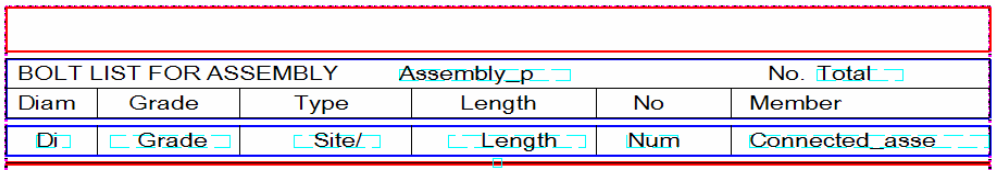


3. Define the conversion options and …

4. …edit the template components and objects like in the previous example but leave the hierarchy definition for the next task.





Hierarchy

The whole hierarchy of the objects must be defined in the template (see appendix I) in order to get the data of sub-rows. In this example bolts are attached to some part, not to the assembly directly. Therefore, an additional row is needed between the assembly and bolt rows.

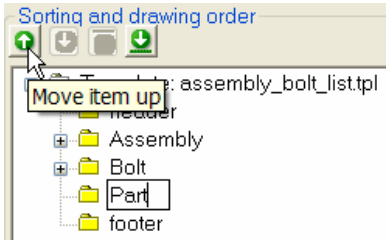
1. In the components toolbar select "**Row**".

2. Select "PART" as the content type

A new row is created.

3. Double-click on the new row in the content browser or on the row border in the editor to open the **Row Properties** dialog.

4. Enter a descriptive name for the row in the Content Browser.



5. Move the row up between the Assembly and Bolt rows by selecting the row and clicking on the **Move item up** button.

6. Shift the Part row hierarchically down a level under the Assembly row by clicking on the **Shift row down a level** button.

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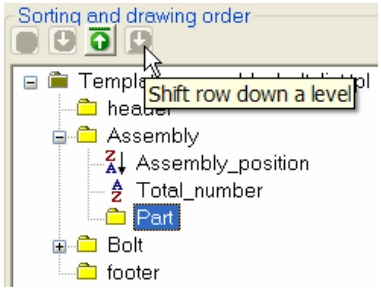
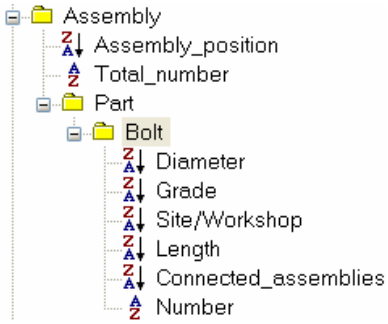


7. Select the Bolt row and shift it under the part row by clicking on the **Shift row down a level** button twice.

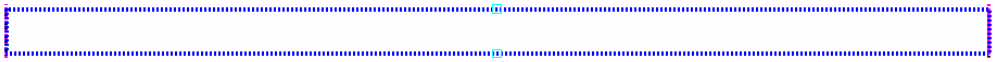


Visibility

The Part row can now be hidden in the final output.

1. Open the Part row's properties dialog.
2. Tick the **Hide in output** field. The row is run, but not printed into final output.
3. Click **OK**.

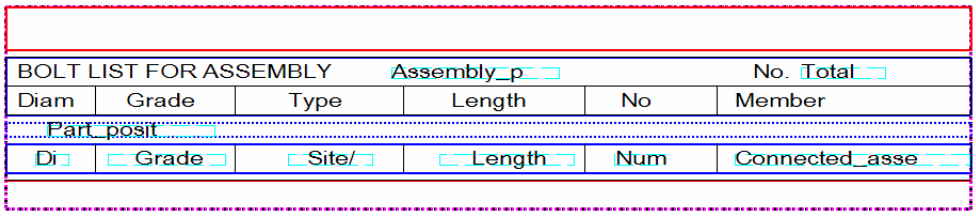
The hidden row is displayed as a dashed line.



New objects

The Part row needs some contents. Add a value field **PART_POS** with ascending sorting into the row in order to have all different parts listed. It will not be visible, because the row has the option "Hide in output".

The final template should look like this:



The hidden objects (row and value field) are displayed as dashed lines.

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1.3 Convert an AutoCAD File into a Template

You can use AutoCAD (DXF or DWG – AutoCAD 2000 and older) files and MicroStation (DGN – MicroStation DGN 7) files in graphical templates. Template editor imports the files and converts their contents to a group of drawing objects. If you have designed a template with AutoCAD you can use ***free attributes*** in AutoCAD to mark value fields. Template Editor automatically converts them to value field objects as the file is imported. Read more about warnings in TempEd Help: Template Editor > Working with template objects > AutoCAD and MicroStation files > limitations in AutoCAD and MicroStation file imports.

Create a drawing title and revision templates

Create a new template

1. Create a new graphical template by clicking on the **New** icon or by selecting **New** on the **File** drop-down menu or by typing **Ctrl + N**.
2. Select **Graphical template** as the template type.
3. Click **OK**. A new template is created.

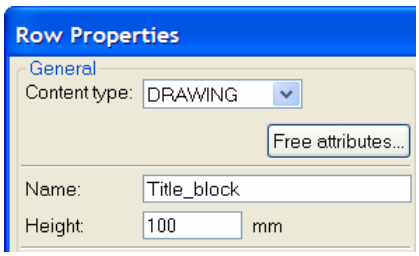
Insert a row and define its properties

1. Insert a single row by clicking on the **Row** button on the **Component** toolbar.

2. Select the content type to be "DRAWING", because we are inserting a drawing title block.

The available attributes depend on the content type. If the file which will be imported has attribute fields, it is essential to set the row's content type so that the corresponding attributes are available in the template.

3. Open the **Row Properties** dialog and give a descriptive name for the row.
4. Set the row height to 100 mm.



5. Click **OK**.

Insert the AutoCAD file and edit its contents

Now you can insert the AutoCAD file inside the row.

1. Select **Insert > File…**.
2. Pick the file you want to insert.
3. Double-click on the spot where you want to position the lower left corner of the title block.

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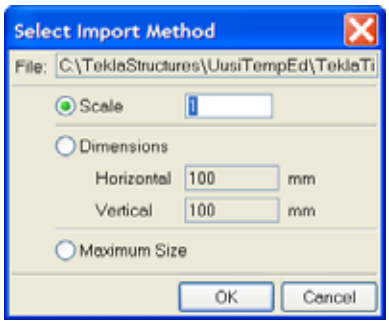
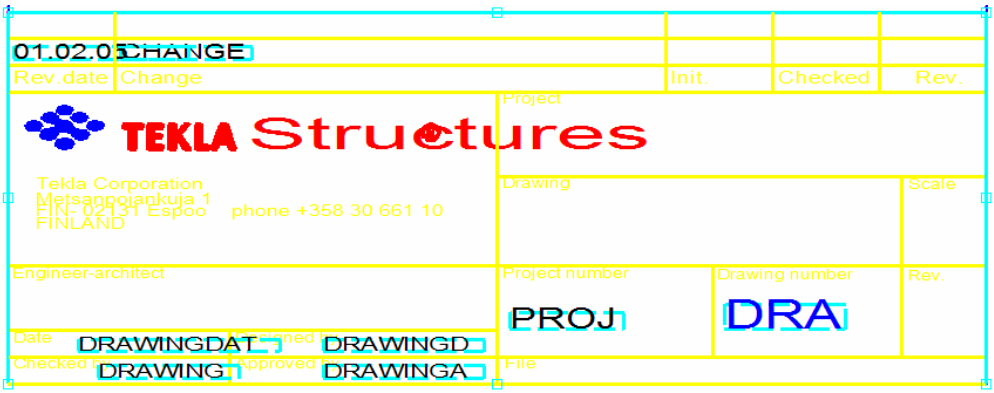
Template Editor opens a dialog for size and scale definition.



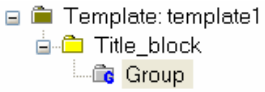
4. Select the **Scale** radio button and set the scale to 1 – the AutoCAD block will be in scale 1:1 in the work area.

If you want to define the size, select the **Dimensions** radio button and enter horizontal and vertical values.

The title block is inserted as a group of objects inside the row borders.



…and it appears in the content browser as a group.



Ungroup the inserted block

In order to edit the contents of the inserted block, you need to ungroup it first by selecting the group and **right-click > Ungroup**. Read more about groups in TempEd Help: Template Editor > Working with template objects > Editing template objects > Group or ungroup objects.

The individual objects inside the block become editable and visible in the content browser.

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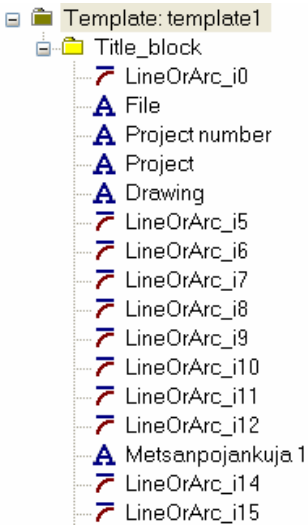
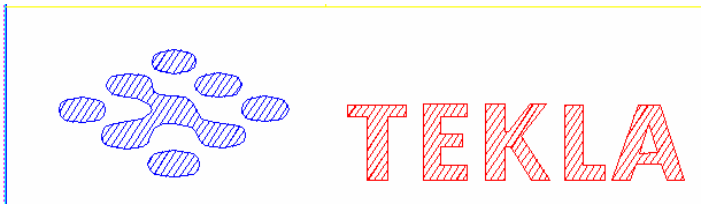


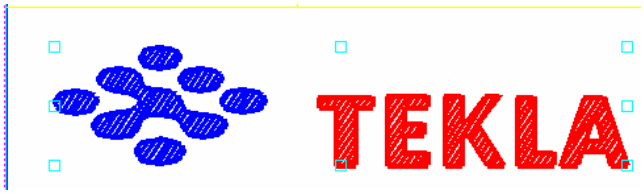
Group the lines of the company logo

Objects, such as lines, are now separate and in some cases it is advisable to regroup them. Next, we will form a group of the lines, which form the company logo.

1. Zoom in to the logo with the middle mouse roll button.



2. Using area select, select all the lines which form the logo.
3. Right-click > **Group**. A group is created.



You can resize the group by dragging the corner handles. Group properties, like color, can be edited on the **Group Properties** dialog (select the group and right-click > **Properties**).

Define fonts for the texts

The fonts used in text objects are mapped to Tekla fonts. This may slightly distort the font alignment within the text object as the original font geometry is not available in Template Editor. You need to edit the text properties.

1. Select the text you want to edit.
2. Right-click > **Properties**.
3. Click on the **Font…** button.
4. Select either a TrueType font or a Tekla font on the list.
5. Select the font size.
6. Select **Ratio (h/w)** in the **Effects** section and change it to "0.6".
7. Click **OK** in the **Select Font** dialog.
8. Click **OK** in the **Text Properties** dialog.

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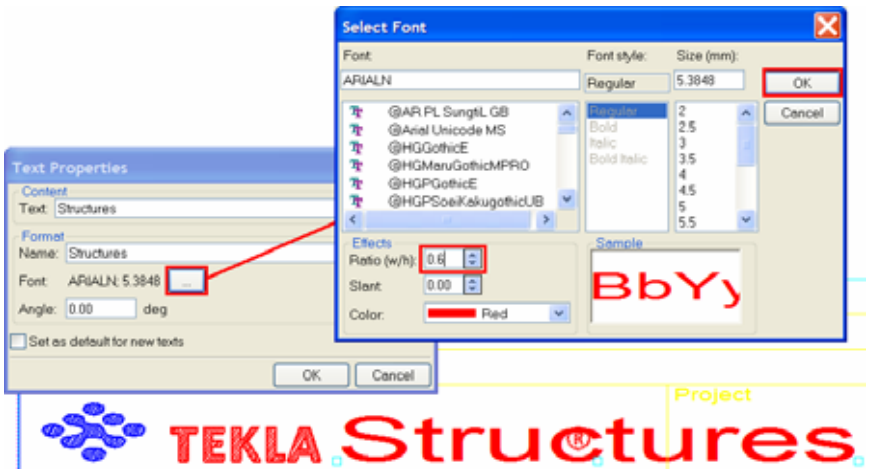
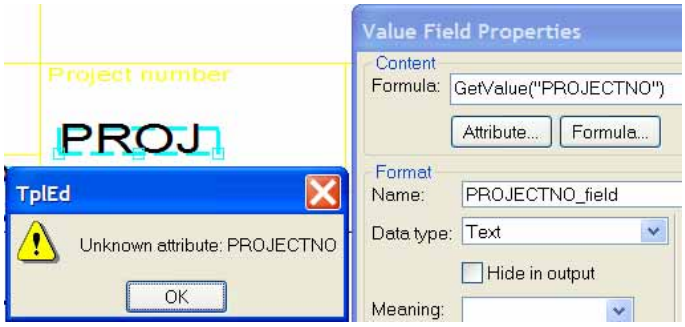


Define the value fields

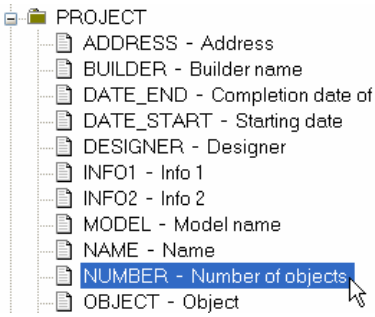
1. The attribute fields in the AutoCAD file have been converted into value fields, but the attributes need to be defined. Go through all value fields and set the attributes into the **Formula** field in the **Value Field Properties** dialog using the list under the **Attribute…** button. Read more about attribute descriptions in Tekla Structures Help: System > Appendix D: Template fields.

2. Open the **Value Field Properties** dialog by double clicking the "**PROJECTNO**" value field in the content browser or in the work area. A warning of missing attribute is displayed and it can be ignored and closed by clicking the **OK** button.

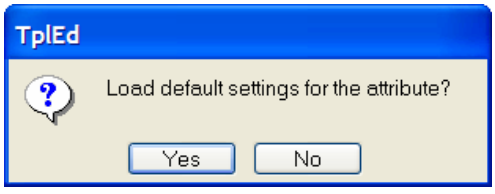


3. Push the **Attribute…** button to open the **Select attribute** dialog.

4. Select the corresponding attribute from the list and accept with **OK**.



5. Load the default settings for the attribute by clicking the **Yes** button.



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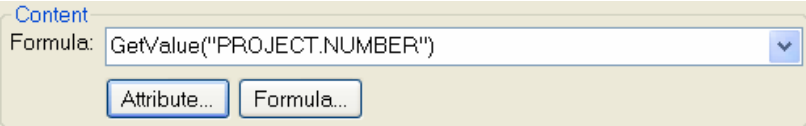


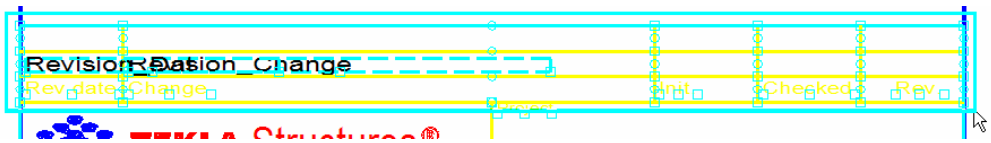
6. Close the dialog with **OK**.
7. Repeat for the rest of the value fields.
8. Finally, save the template.

Break the template into two separate templates

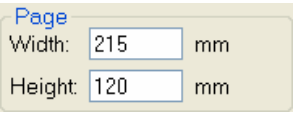
You can open several templates simultaneously. Read more about working with multiple templates in TempEd Help: Template Editor > Working with templates > Creating, opening & saving templates > Work with multiple templates.

Each template is displayed in its own window inside the work area and as a folder in the content browser. You can cut or copy template objects from one template and paste them into another template easily when multiple templates are open. We will next separate the revision lines from the drawing title and create a new template for them.

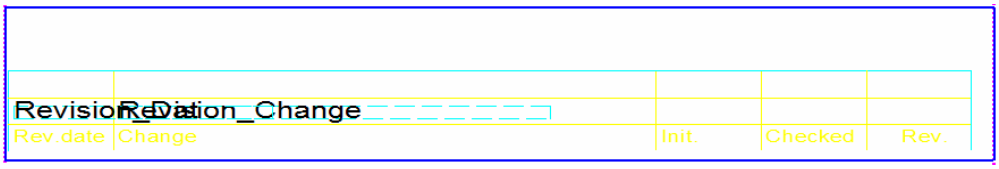
1. Area select the objects – lines and value fields – which are to be cut from the drawing title template (deselect the row by holding the Ctrl key down and picking the border).



2. Cut the objects using **Ctrl + x** or right-click > **Cut**.
3. Create a new graphical template.
4. Insert a row.
5. Set the row content type to be **REVISION**.
6. Because the area needed for pasting must be large enough, edit the template page width to be 215 mm. Double-click on an empty area to open the **Page Properties** dialog.



7. Paste the objects inside the row using **Ctrl + v** or right-click > **Paste**.



The value fields and drawing lines are inserted into the new template. Now, save both templates.

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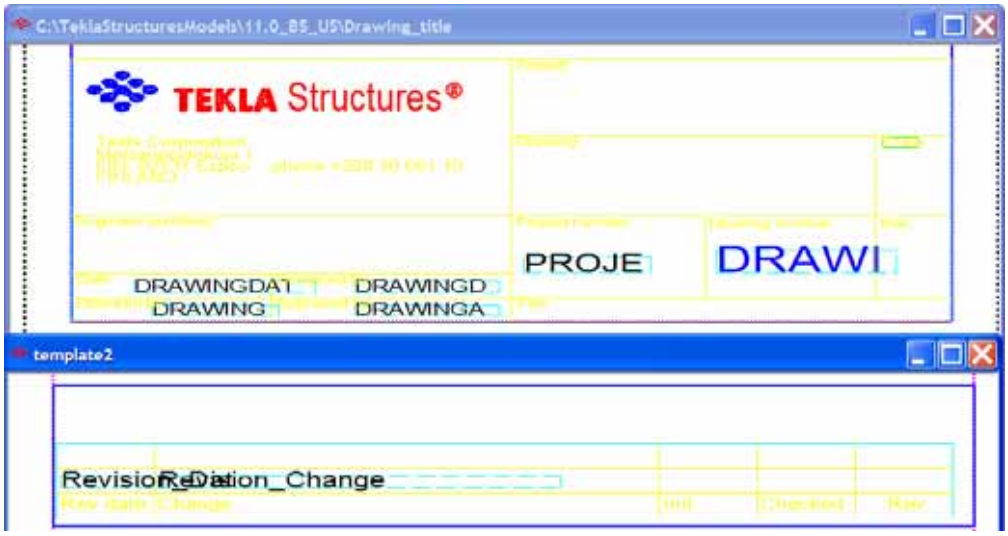
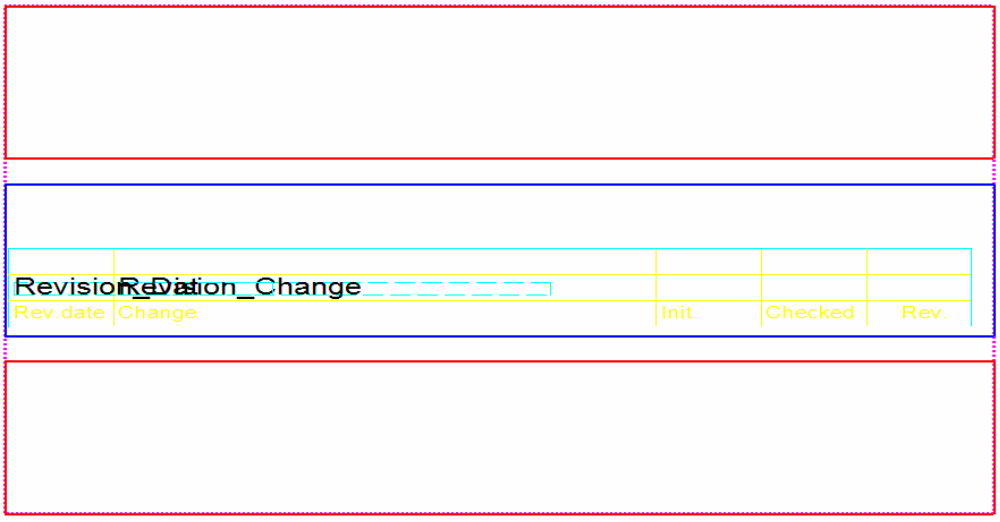


Edit the new template

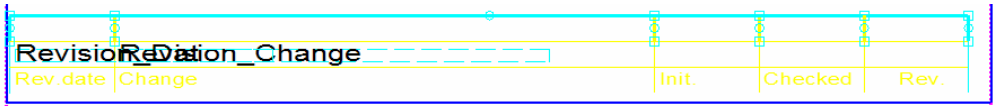
The new template needs some editing. We will create a header and a footer and move the texts and the some of the lines into them leaving only the value fields into the row.

1. Create the header by clicking on the **Header** icon.

2. Create the footer by clicking on the **Footer** icon.



3. Select the lines, which form the upper row above the Value fields.



4. Cut and paste them to the header.
5. Select the texts and the lines which form the lower row below the value fields.
6. Cut and paste them to the footer.

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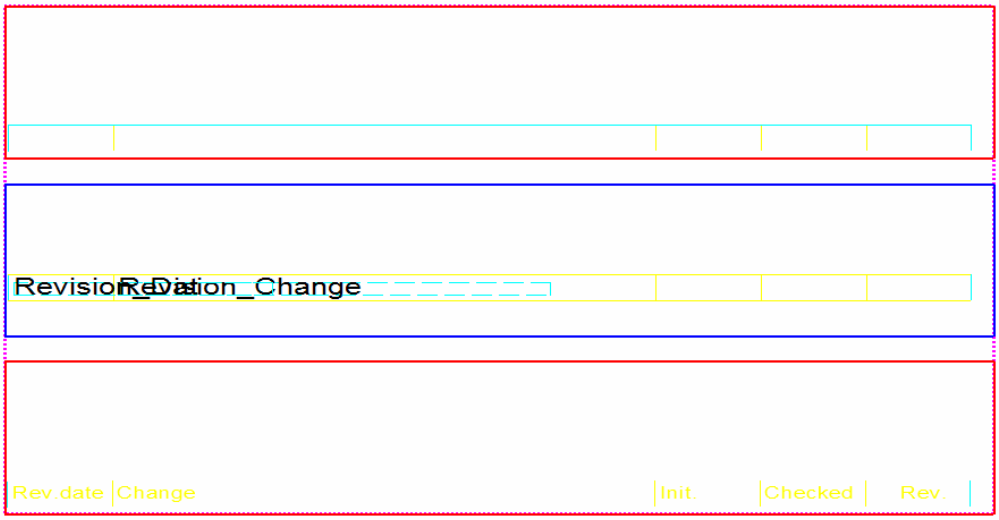
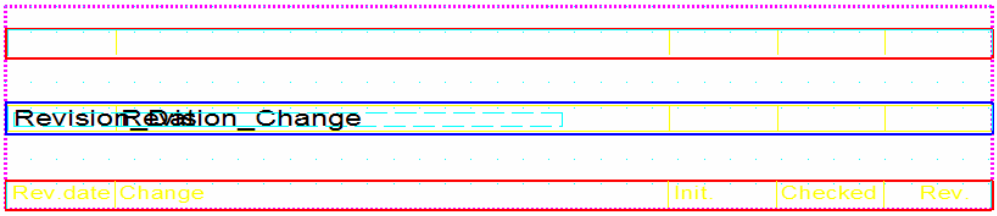


7. Select the row and resize the template components to fit the objects inside them using the **Edit > Crop > Template right side** and **Edit > Crop > Component height** functions.



8. Save the template.

Create a "bill of materials" template

Using the same procedure of AutoCAD file insertion, we will next create a bill of materials template to be used in multi-drawings.

Create a new template

1. Create a new graphical template by clicking on the **New** icon or by selecting **New** from the **File** drop-down menu or by typing **Ctrl + N**.
2. Select **Graphical template** as the template type.
3. Click **OK**. A new template is created.

Insert a row and define its properties

1. Insert a single row by clicking on the **Row** button on the **Component** toolbar.

2. Select the content type to be "ASSEMBLY", because we are inserting an assembly related file block.
3. Check the dimensions of the AutoCAD block and edit the template page properties accordingly. Double-click on an empty space to open the page properties dialog.

It is essential to have the same dimensions in the template and in the AutoCAD file in order for the scale to be the same.

Insert the AutoCAD file

Now you can insert the AutoCAD file inside the row.

1. Select **Insert > File...** on the drop-down menu.

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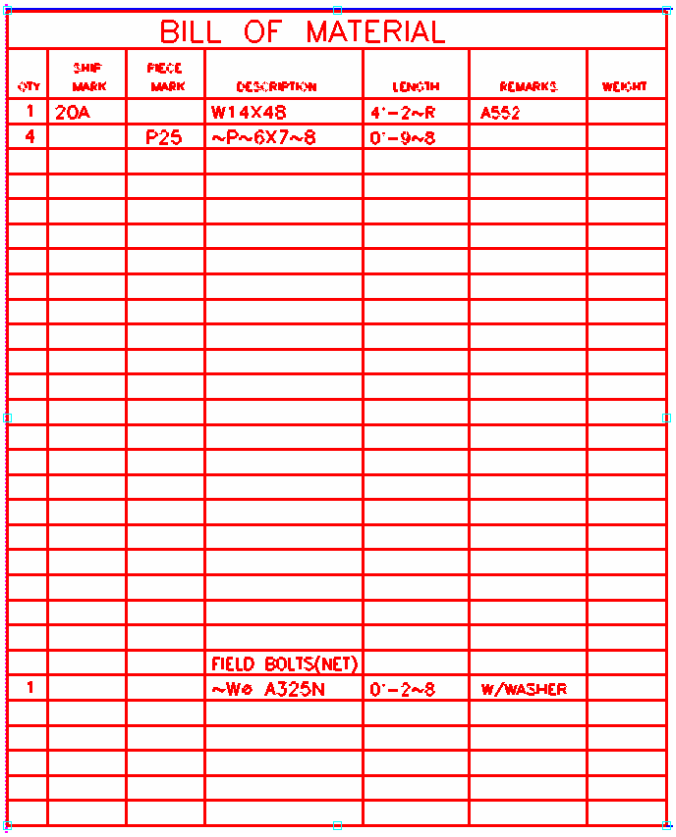
2. Pick the file which you want to insert in the browser.
3. Double-click on the spot where you want to position the lower left corner of the block and set the scale to be 1:1. A group of objects is inserted inside the row borders.



Design the template contents and break the block

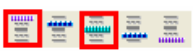
Next examine the file contents and design your template contents:

- What template components do you need? A header, some rows…
- What content types do you need for the rows? Assembly, part, bolt…
- Do you need hierarchy between the components? Assembly – part – bolt relations…
- What kinds of objects do you need? Value fields – what attributes should you use?
- How do you divide the contents of the block? What object goes where?

When you design your template structure, always keep in mind that the attributes collect data directly from objects in the Tekla Structures model and the content type of the rows determine what attributes are available. Also note the hierarchical structure of the objects in the model and how it affects the template.

Create template components and define content types

Next, insert the needed template components: header, which will have the labels, rows for assembly, part and bolt data and some rows for empty space. Click on the "**Header**" and "**Row**" button on the **Component** toolbar and define the content types for the rows: assembly, part and bolt – leave two row's content type undefined.



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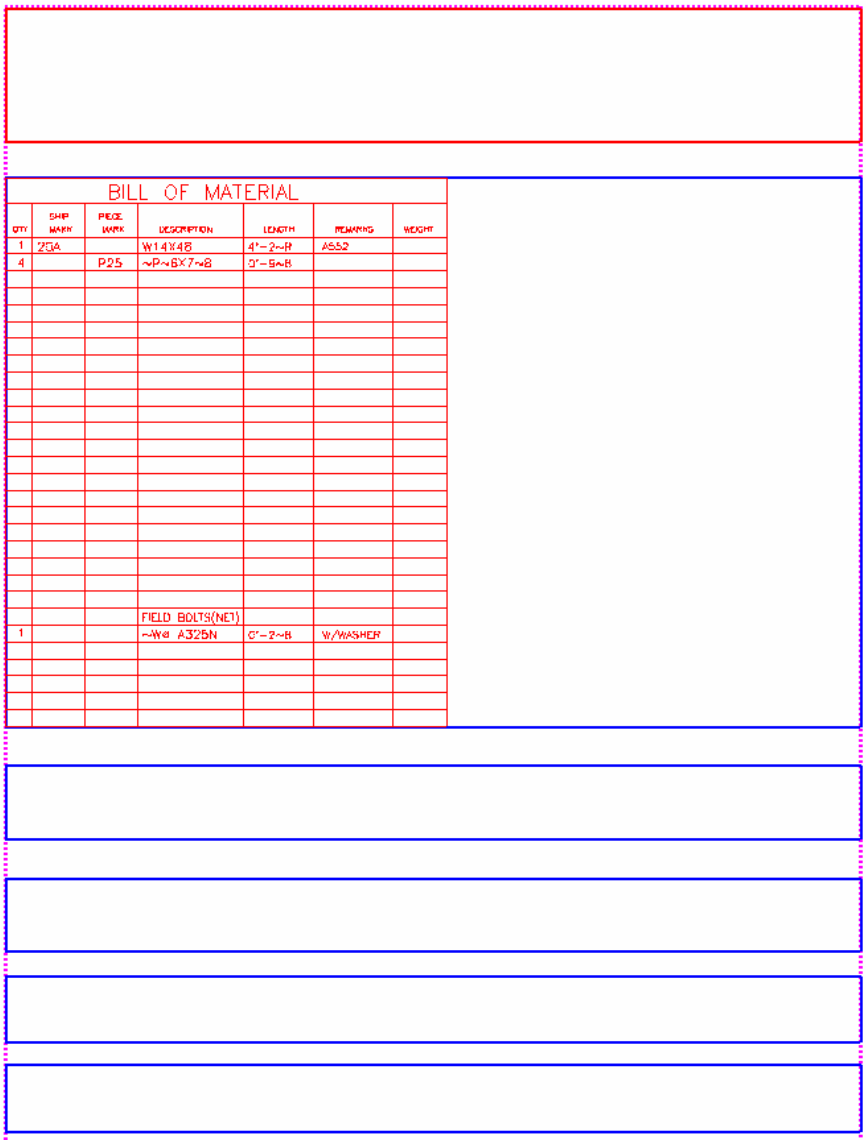
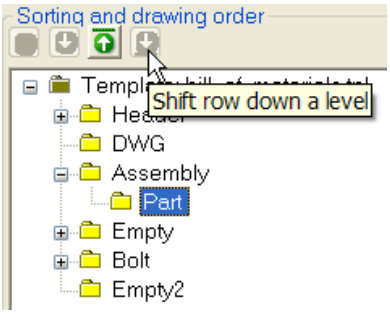


Define the hierarchy

Because we would like to list all parts under the assemblies which they form, we need to set an assembly–part hierarchy for the rows. Bolts will be listed separately, so no hierarchy is needed there. In the **Content Browser**, select the part row and shift it down a level under the assembly row using the **Shift row down a level** button.



Divide AutoCAD block contents into template components

Now, we can start putting the template objects into the components. Start by ungrouping the AutoCAD block.

1. Select the block.
2. Right-click > **Ungroup**.

Cut the objects from the block and paste them into the components which you have created.

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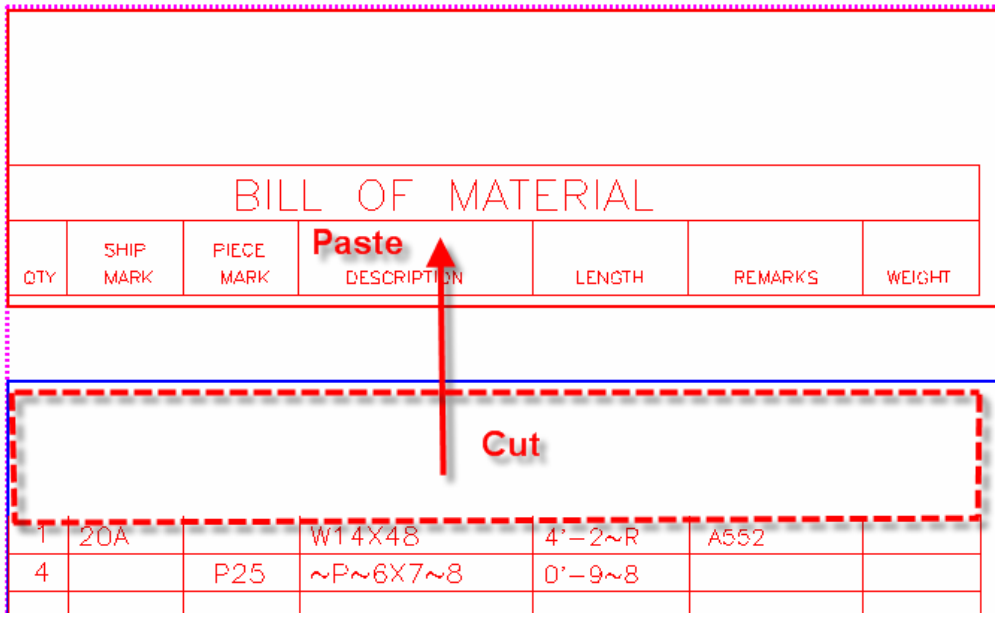
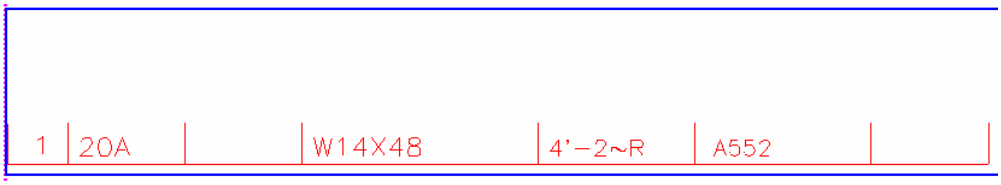
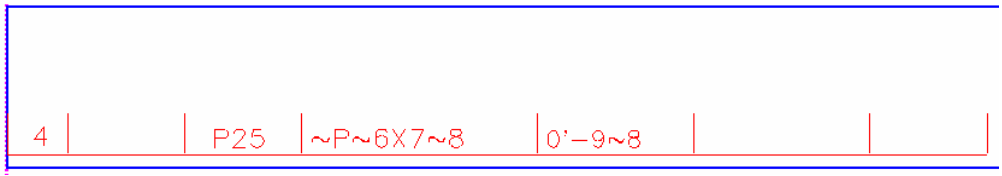
1. Select the texts and lines which will go into the header and cut and paste them.



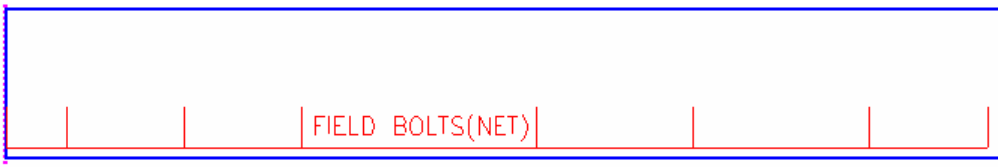
2. Then cut and paste the texts and lines which belong to the assembly row.



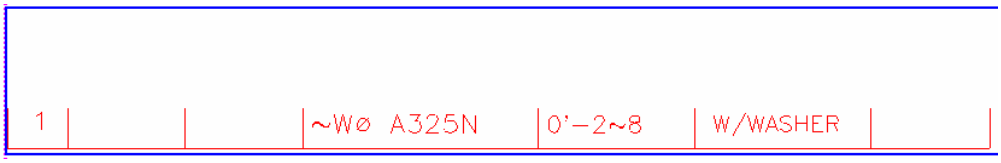
3. Continue with part row objects.



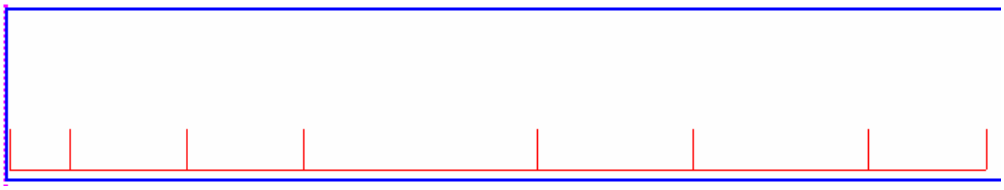
4. Then move the bolt "header" information into the empty content type row.



5. Followed by the bolt row contents.



6. And finally contents of one single, empty row – just the lines, without any texts.



Then copy and paste the last empty row with the contents into the template and lift the new row up under the assembly row using the **Move item up** button in the Content Browser.

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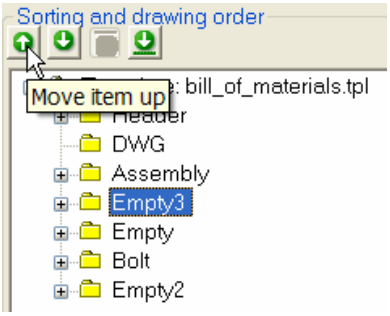
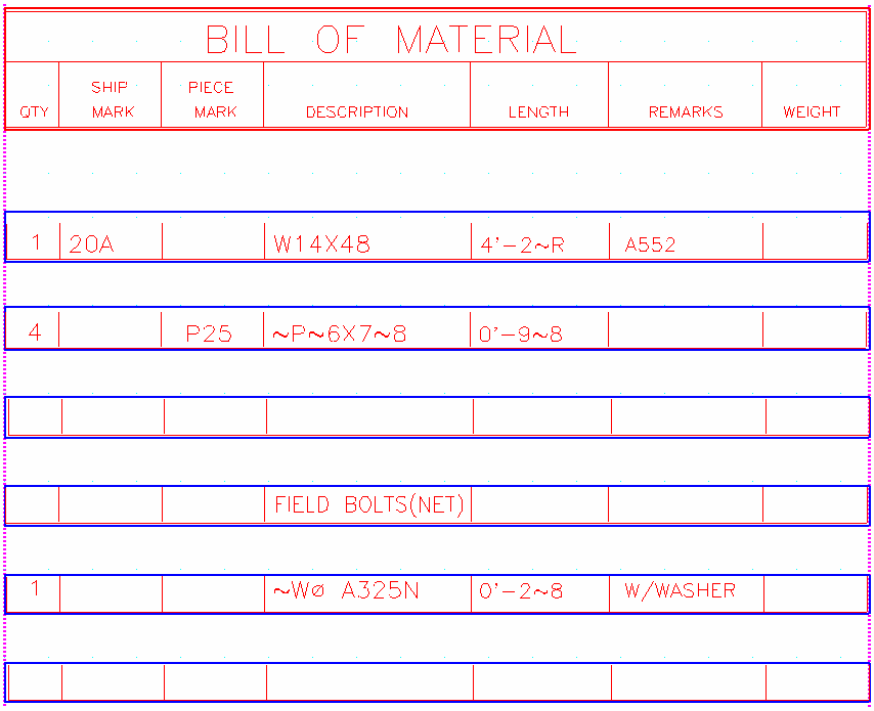


We now have all the needed template components – and more, so we can clean the template by deleting the first row with the remains of the block, which are no longer needed.

Select the components and resize them to fit the objects inside them using the **Edit > Crop > Template right side** and **Edit > Crop > Component height** commands.



Insert value fields

When the template components are filled with the correct objects from the AutoCAD block, we will replace the texts inside the rows with value fields, which will collect data automatically from the Tekla Structures model. When deciding what attributes should be used, note the content type of the row and the label in the header, which refers to the contents of the value field. Read more about attribute descriptions in Tekla Structures Help: System > Appendix D: Template fields.

1. Start with the assembly row and select the number under QTY.
2. Delete it.
3. Pick the value field icon and point the location inside the Assembly row. A list of assembly related attributes opens in a separate dialog.
4. Select the NUMBER attribute.

5. Continue with the "Ship mark" by deleting the text and inserting a value field which has the ASSEMBLY_POS attribute.
6. Complete the row by replacing the texts with the corresponding value fields.

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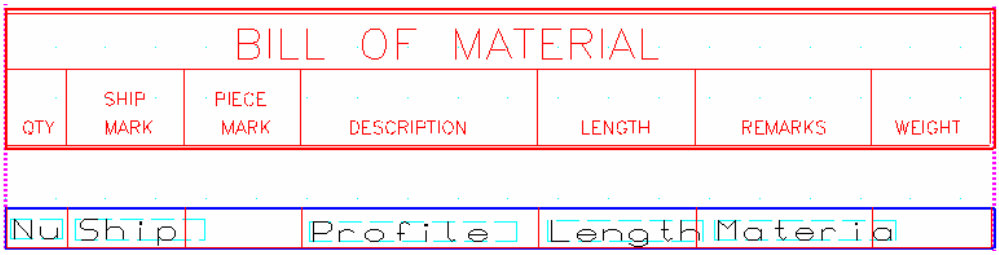

7. Insert value fields also into the part and bolt rows the same way.

Set rules for rows using Wizard

After component objects are in place, you can define the rules for rows. We will next use the rule wizard for creating an "if–then–else" statement for the bolt title row to place the row into the 23rd row of the page.

1. Open the **Row Properties** dialog of the row having the bolt title information.

2. Click on the **Wizard** button.

3. Click on the **None** button under the attributes.
4. Select the ROW_IN_PAGE attribute from the list. The attribute name appears in the button.

5. Then set the value to be equal to "23".

6. Click **OK**. The rule is generated automatically:

```
if (GetValue("ROW_IN_PAGE") == "23") then
  Output()
else
  StepOver()
endif
```

7. Close the properties dialog with **OK** and save the template.

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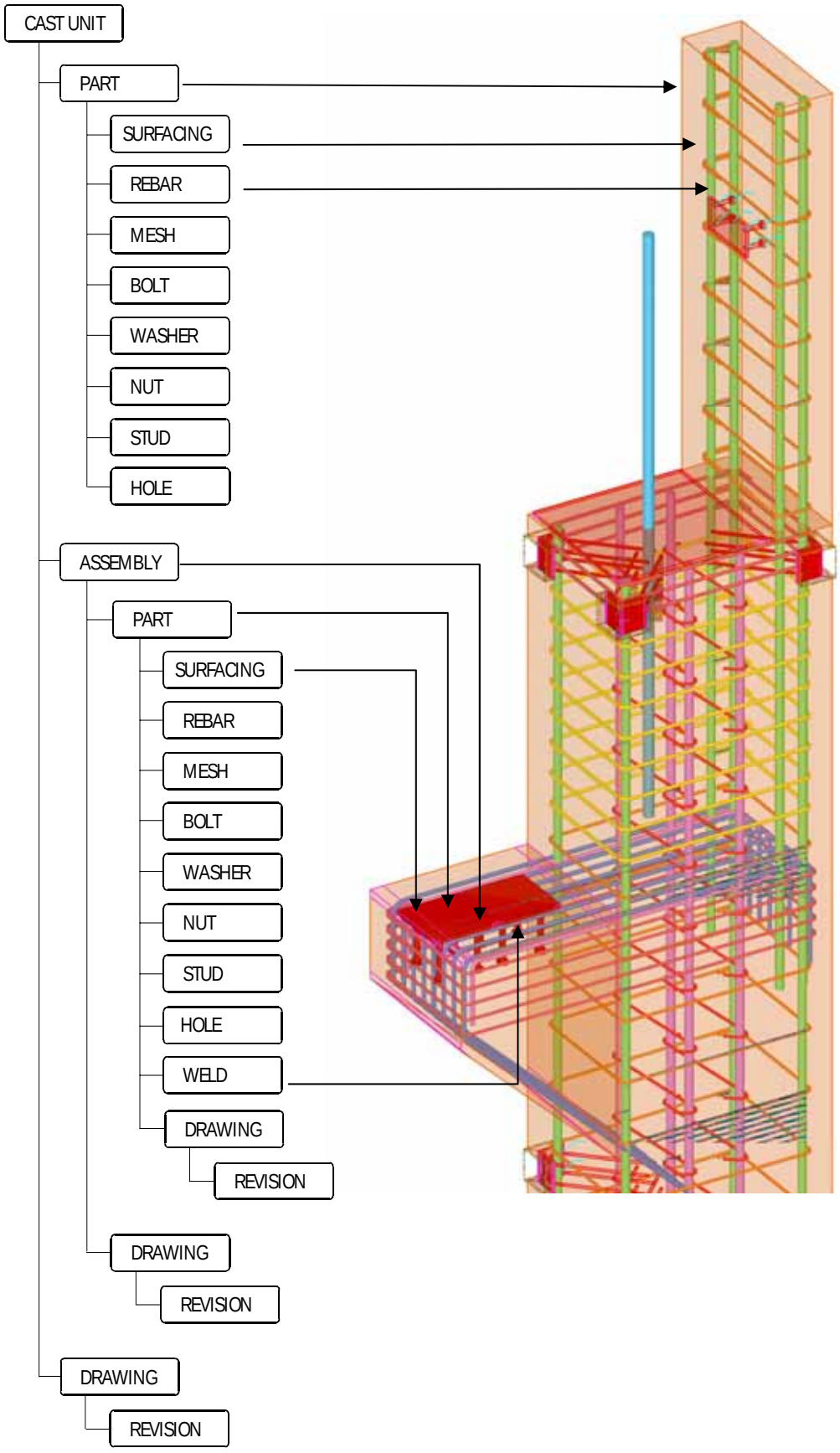
APPENDIX I

Hierarchy of objects in a cast unit in a Tekla Structures model



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