



BTG SOLIDWORKS Add-In

Version: 1.0

Date: 02 Jan 2024

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This is the guide for BTG SolidWorks Add-In which is developed by Bend-tech group. This Add-In is designed to aid the engineers in Bend-tech group and any related party to automate redundancy tasks when designing products using SolidWorks. This Add-In utilizes SolidWorks API and is written in C# using Visual Studio IDE. All interfaces in the Add-In were designed with WPF (Window Presentation Foundation). Newer functions were implementing MVVM (Model-View-ViewModel) architecture for better maintainability and testability. Version control as well as publishing are through GitHub. This Add-In required Serial No. from Bend-Tech Group for activation.



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Contents

1.	What's New	5
2.	Setup	6
2.1.	Prerequisite.....	6
2.2.	Installation	6
2.3.	Uninstallation.....	8
2.4.	License Activation	9
3.	Setting.....	10
3.1.	Setting.....	10
4.	Automation (Model)	11
4.1.	Start Model	11
4.2.	Etch Feature.....	14
4.3.	Plate Cut Size Description.....	19
4.4.	Delete Tube Laser Body	20
4.5.	Naming Project	22
4.6.	Hide Ref (Model).....	27
5.	Automation (Drawing).....	32
5.1.	Sort	32
5.2.	Create All View.....	34
5.3.	Auto View	36
5.4.	Auto Dim.....	42
5.5.	Balloon.....	46
5.6.	Quick Note	47
5.7.	Align Longest Edge	50
5.8.	Link BOM	51
5.9.	Etch View	54
5.10.	Colour View	55
5.11.	Hide Ref (Drawing).....	56
5.12.	Auto Generate DXF Sheets.....	57
6.	Export	60
6.1.	Export Project	60
6.2.	Prep DXF Export	66
6.3.	Export DXF	69



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6.4.	Export BOM	71
6.5.	Export PDF	73
6.6.	Export Model	74
7.	Experimental.....	77
7.1.	Platform Automation.....	77



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1. What's New

1.1. Add-In revamped.

The Add-In is revamped with better programming backend for improved maintainability and feature development pipeline.

1.2. License revamped.

User no longer requires activating the license every time when upgrade the software unless the license file is expired or deleted.

1.3. Migrate from mStructural.

All macros have been migrated into BTG SOLIDWROKS Add-In from mStructural Add-In.

1.4. New Auto Generate DXF Sheets Macro.

New macro to automatically generate DXF sheets for selected view model of a drawing file.



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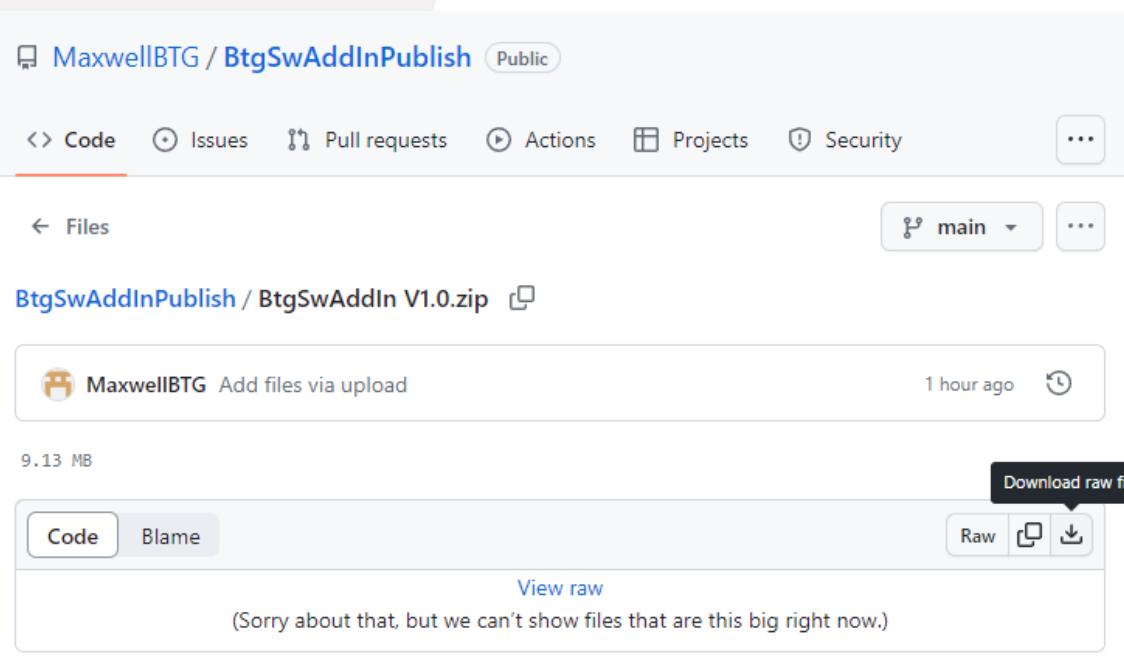
2. Setup

2.1. Prerequisite

- 2.1.1. This add-in is developed and tested with the following software installed on the PC. There might be some error if this prerequisite does not meet.
 - 2.1.1.1. SolidWorks 2022 sp5.0 or newer.
 - 2.1.1.2. Microsoft 365

2.2. Installation

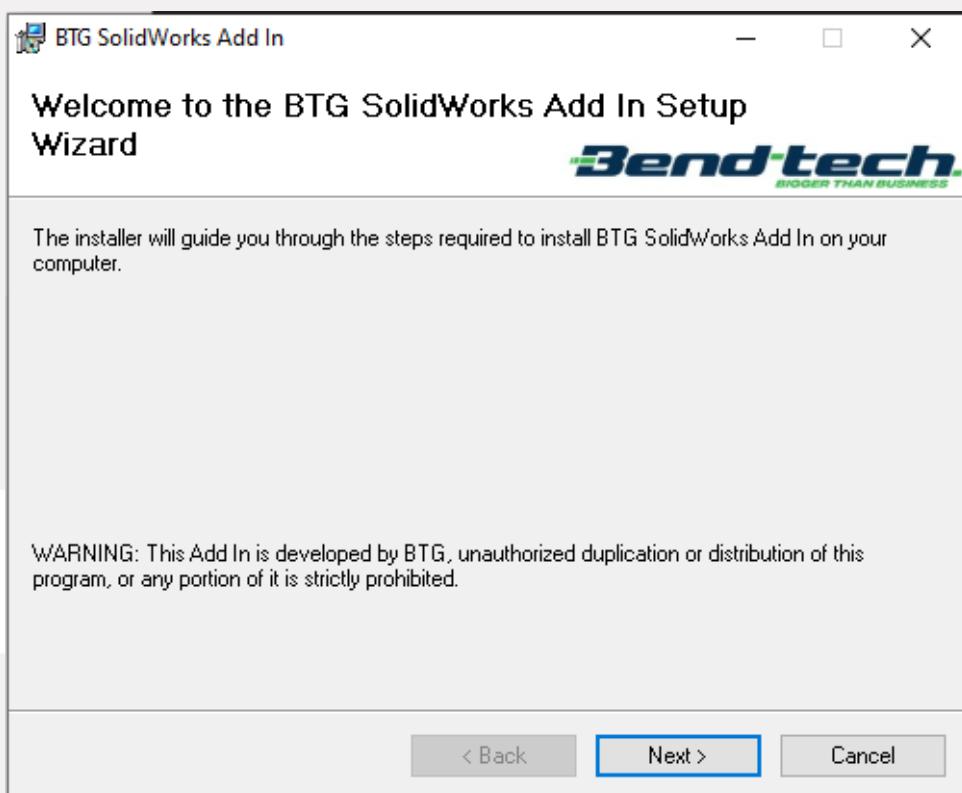
- 2.2.1. Visit website: [MaxwellBTG/BtgSwAddInPublish: For Add In publish \(github.com\)](https://github.com/MaxwellBTG/BtgSwAddInPublish)
- 2.2.2. Choose the latest version.
- 2.2.3. Click the Download button.



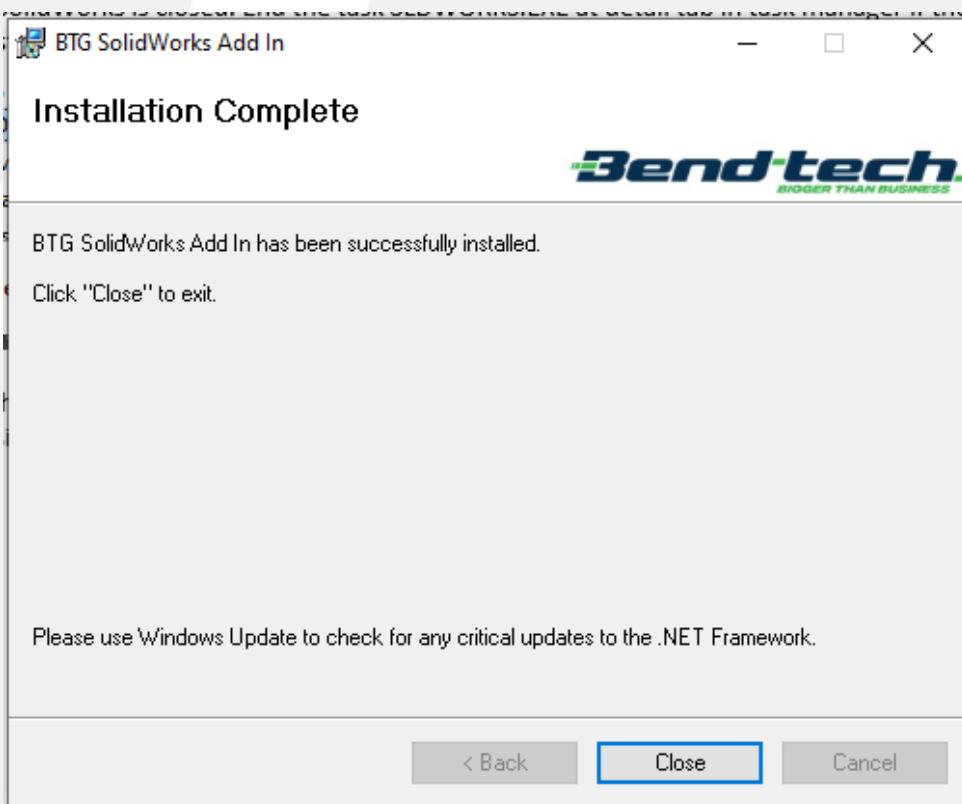
The screenshot shows a GitHub repository page for 'MaxwellBTG / BtgSwAddInPublish'. The 'Code' tab is selected. A file named 'BtgSwAddIn Publish V1.0.zip' is listed, uploaded by 'MaxwellBTG' via upload one hour ago. The file size is 9.13 MB. A 'Download raw file' button is visible next to the file name. Below the file listing, there is a note: '(Sorry about that, but we can't show files that are this big right now.)'

- 2.2.4. Unzip the installer.
- 2.2.5. Make sure SolidWorks is closed.
- 2.2.6. Run the "setup.exe".

2.2.7. Follow prompted message to install the Add-In.

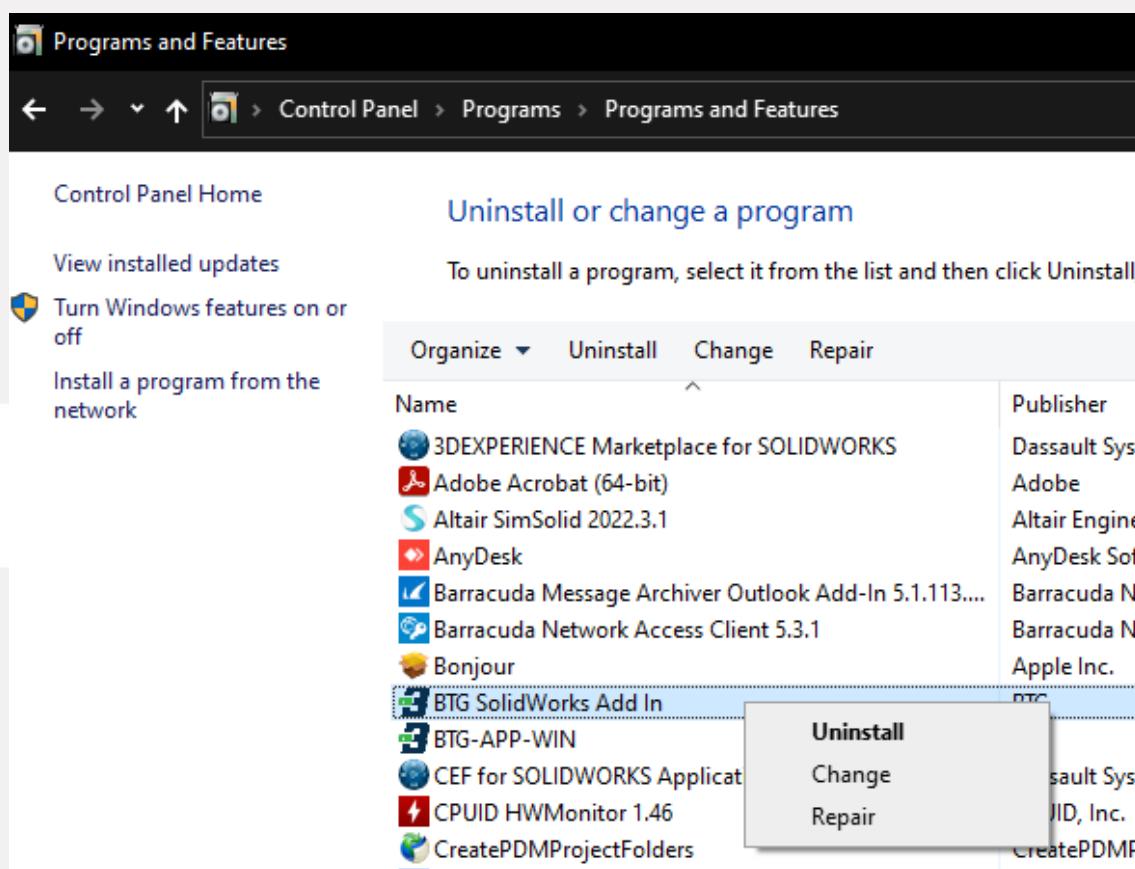


2.2.8. Click close when installation completed.



2.3. Uninstallation

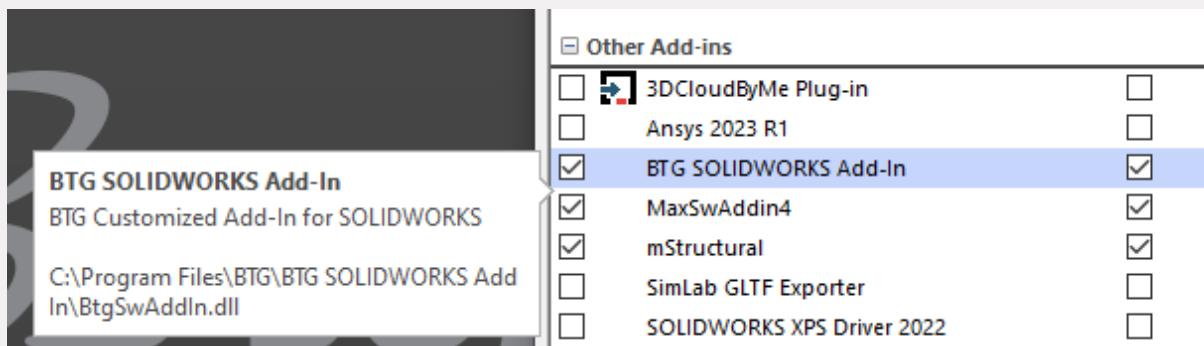
2.3.1. Go to Control Panel > Programs > Programs and Features to uninstall this Add-In.



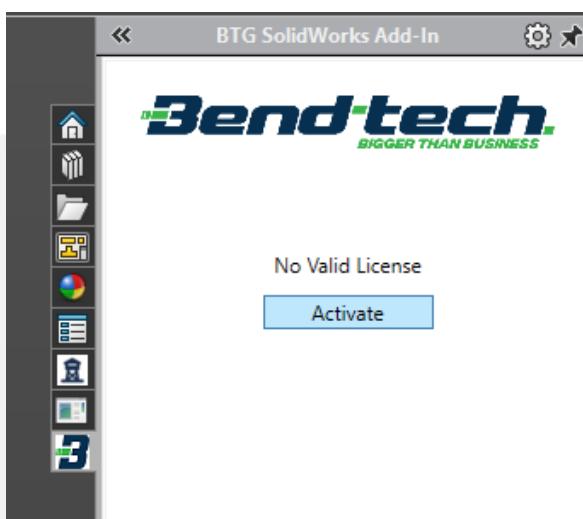
2.4. License Activation

2.4.1. Start SolidWorks.

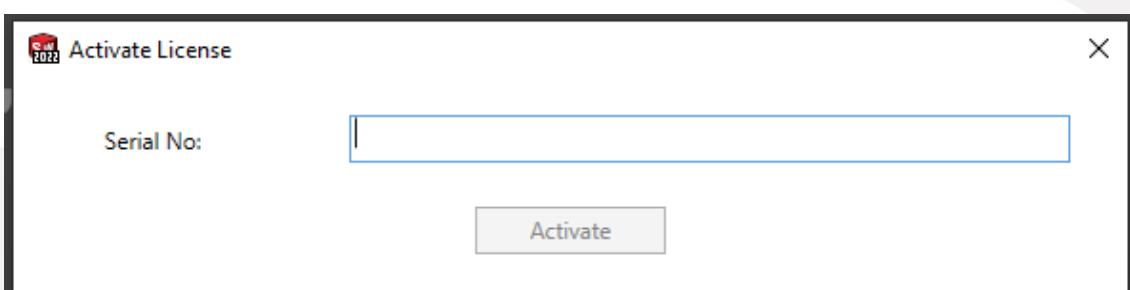
2.4.2. Make sure BTG SolidWorks Add-In is activated at Tools > Add-Ins...



2.4.3. Click "Activate" button at BTG SOLIDWORKS Add-In task pane.



2.4.4. Key in serial number and click "Activate" button.

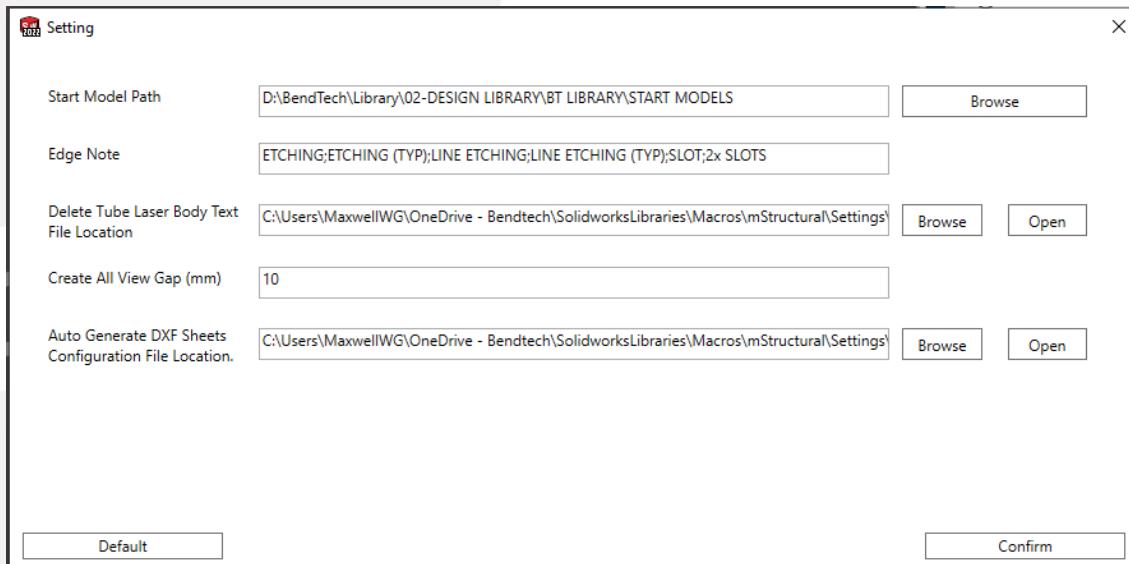


3. Setting

3.1. Setting



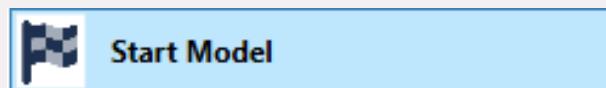
3.1.1. Some macro settings are stored at here. Refer to individual macro for each setting.



3.1.2. Click on “Confirm” button to save changes.

4. Automation (Model)

4.1. Start Model

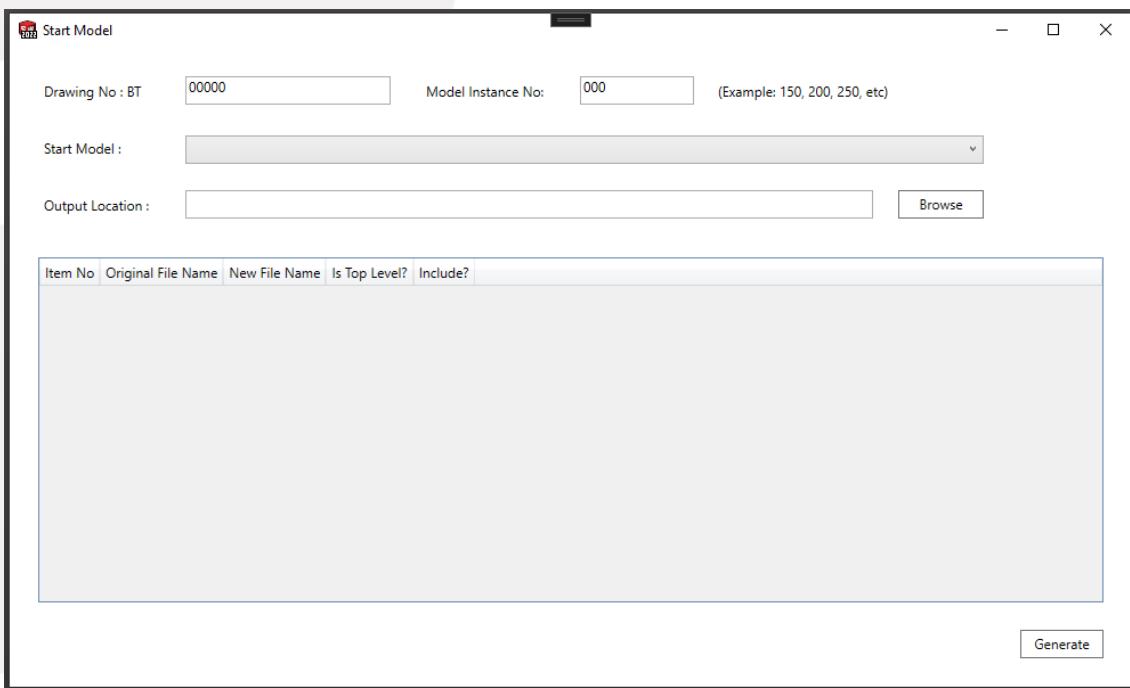


4.1.1. A Macro to save and rename files in a folder according to predefined template. It only supports one level of folder structure, any subfolder inside that folder will be ignored. It only supports part and assembly file.

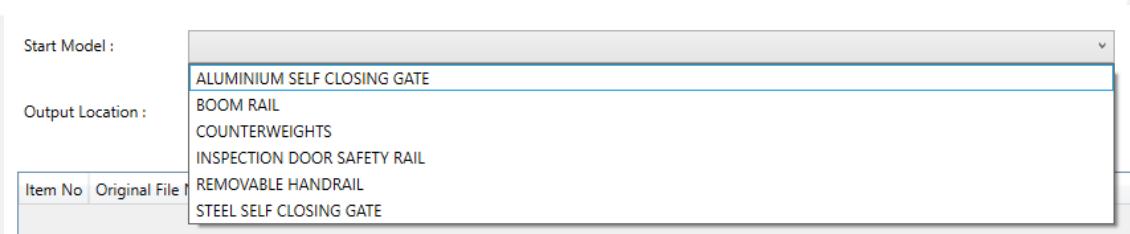
4.1.2. Set “Start Model Path” at Setting.

4.1.3. Make sure no document is opened when running this macro.

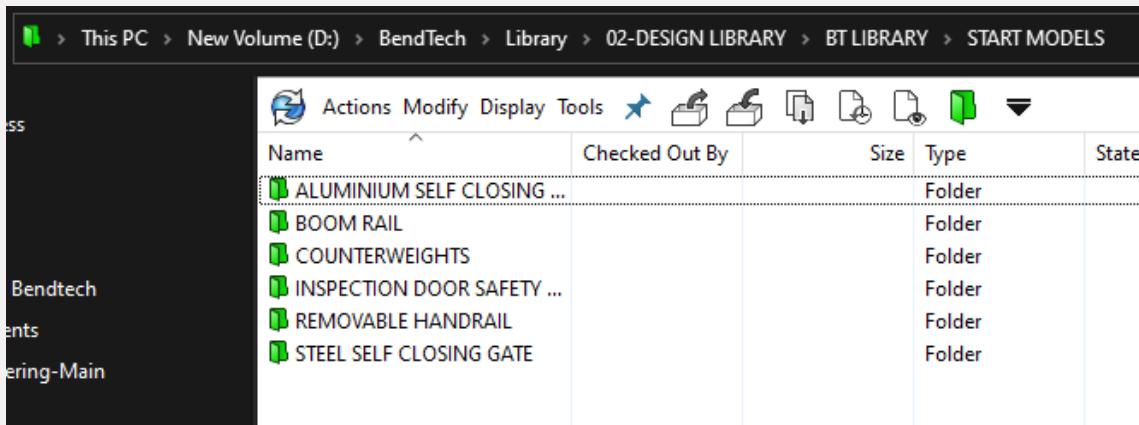
4.1.4. Click on the macro to show Start Model view.



4.1.5. From the Start Model drop down, you can select the model you wish to create.



4.1.6. The dropdown list is the same as the folder structure of the folder defined in setting.



4.1.7. A table with all the models inside that folder will be displayed.

Item No	Original File Name	New File Name	Is Top Level?	Include?
1	BT0XXX_ALU SELF CLOSING GATE.SLDASM	BT00000-AS-000.sldasm	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	BT0XXX_ENTRANCE POST.SLDPRT	BT00000-PT-001.sldprt	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	BT0XXX_ALU GATE FRAME.SLDPRT	BT00000-PT-002.sldprt	<input type="checkbox"/>	<input checked="" type="checkbox"/>

4.1.8. Change Drawing No and Model Instance No accordingly.

Drawing No : BT 08888 Model Instance No: 800 (Example: 150, 200, 250, etc)

4.1.9. You may notice the new name column will change accordingly.

Item No	Original File Name	New File Name	Is Top Level?	Include?
1	BT0XXX_ALU SELF CLOSING GATE.SLDASM	BT08888-AS-800.sldasm	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	BT0XXX_ENTRANCE POST.SLDPRT	BT08888-PT-801.sldprt	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	BT0XXX_ALU GATE FRAME.SLDPRT	BT08888-PT-802.sldprt	<input type="checkbox"/>	<input checked="" type="checkbox"/>

4.1.10. You can override the Name as well.

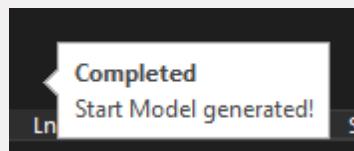
Item No	Original File Name	New File Name	Is Top Level?	Include?
1	BT0XXX_ALU SELF CLOSING GATE.SLDASM	BT08888-AS-800.sldasm	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	BT0XXX_ENTRANCE POST.SLDPRT		<input type="checkbox"/>	<input type="checkbox"/>
3	BT0XXX_ALU GATE FRAME.SLDPRT	BT08888-PT-805.sldprt	<input type="checkbox"/>	<input checked="" type="checkbox"/>

4.1.11. Browse for output location.

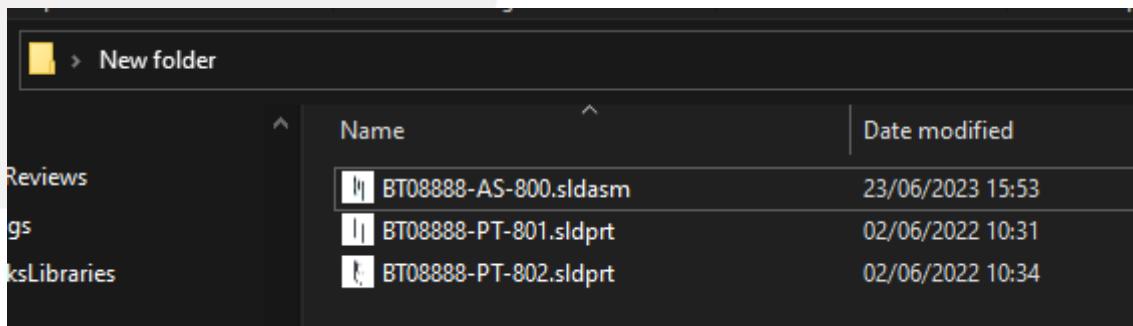
Output Location : C:\Users\MaxwellWG\Desktop\New folder

4.1.12. Press "Generate" button.

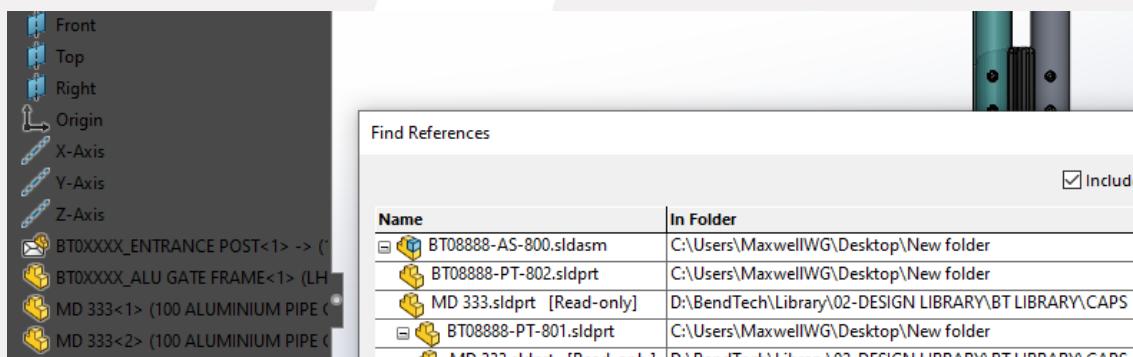
4.1.13. A bubble tooltip will appear at your cursor to indicate that the start model has been generated.



4.1.14. Go to the output folder and you can see your model there.

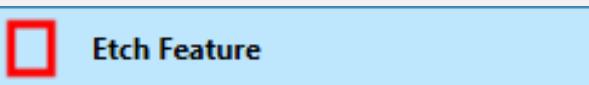


4.1.15. In the feature tree it will still be showing the old model's name until the next rebuild. However, the reference is already updated.



4.1.16. To update, just rebuild the model.

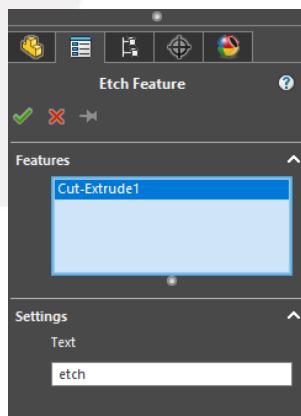
4.2. Etch Feature



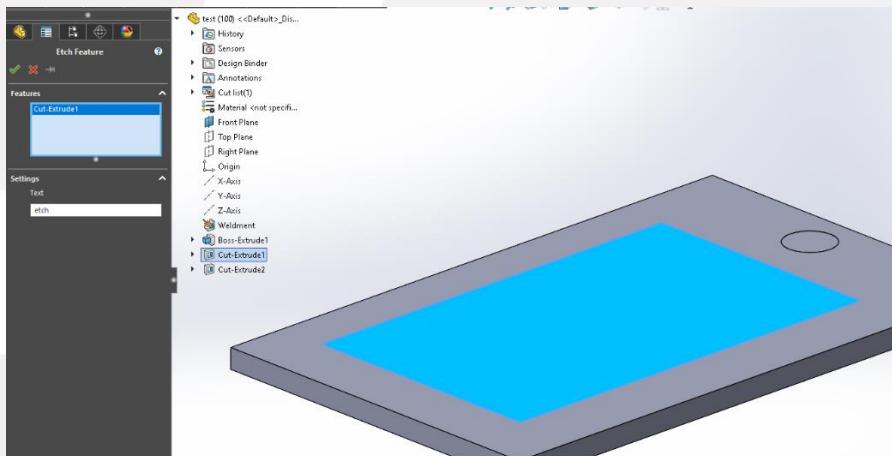
4.2.1. A SolidWorks macro feature that marks the edge of selected feature for drawing processing. It only supports part file.

4.2.2. Video: <https://youtu.be/dOhFuD62B4w>

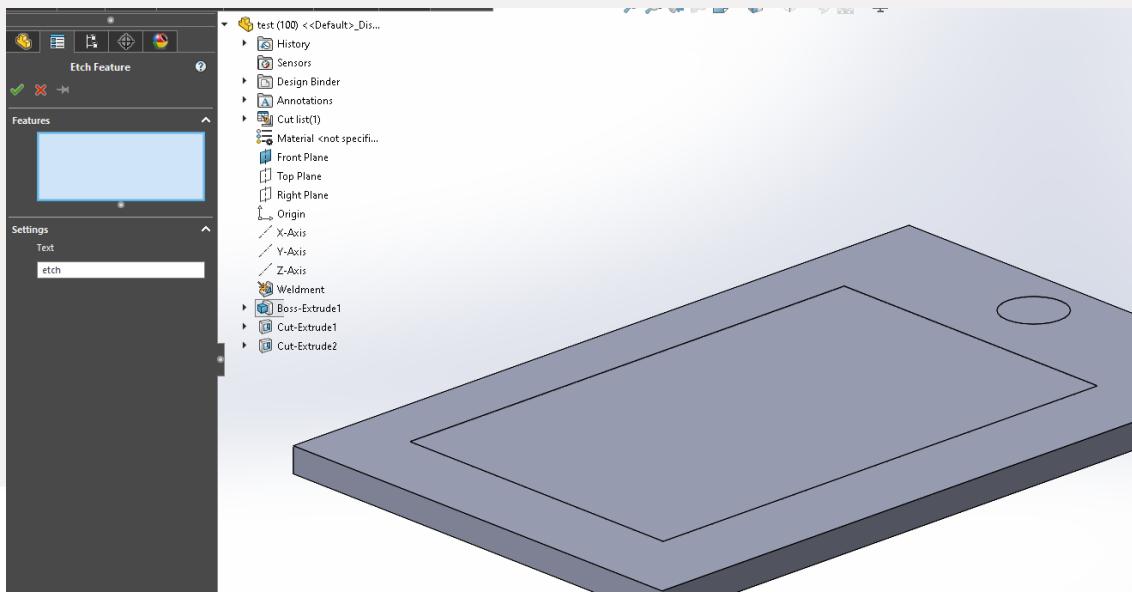
4.2.3. Click the macro. Select features or faces that define the etch feature.



4.2.4. Expand the Flyout Feature Manager Design Tree to select the feature. Notice the highlighted faces in graphics area, it indicates the selected feature and affected faces. You can select the feature through graphics area as well. Try to any face and you can notice the underlying feature will be selected as well.

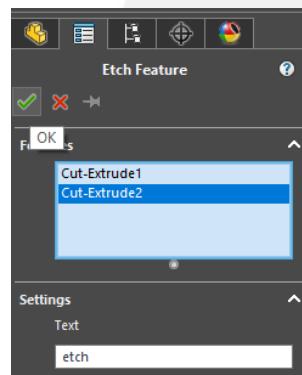


4.2.5. Select the feature again to deselect it.

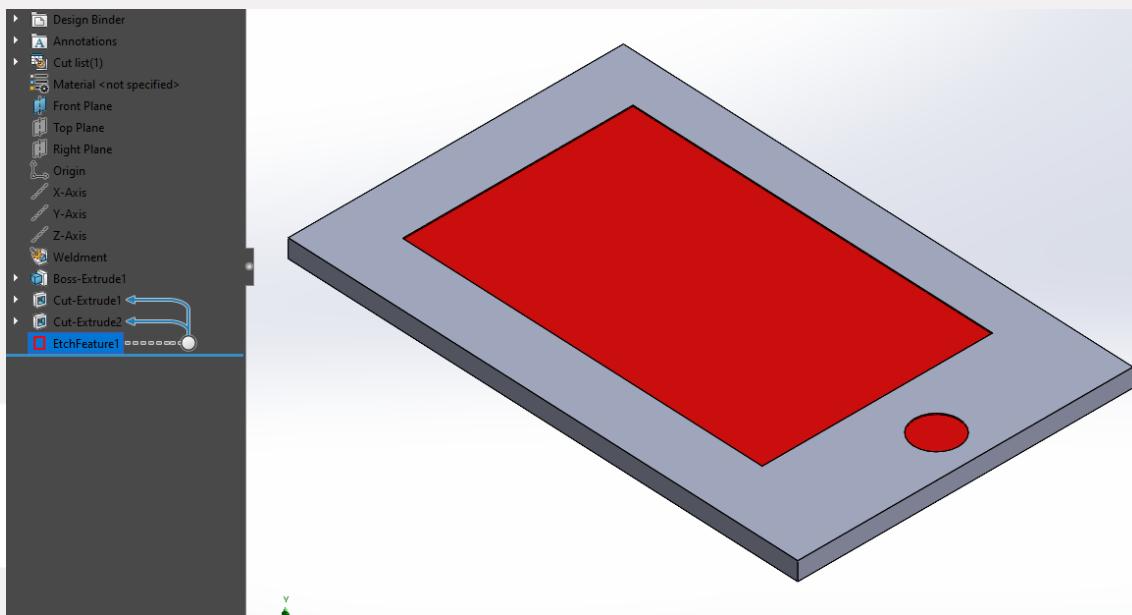


4.2.6. Text field in the settings group let user to customize the base name for entity naming.

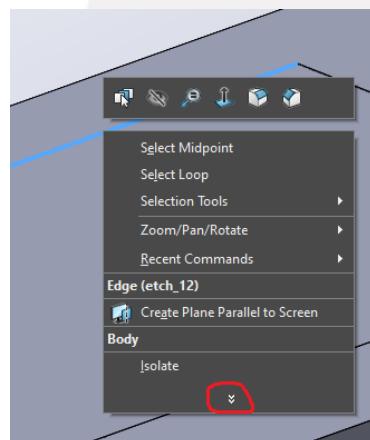
4.2.7. Once confirmed your selection, click the green tick or OK button. Tips: you can press shortcut key D to bring the ok button to your cursor.



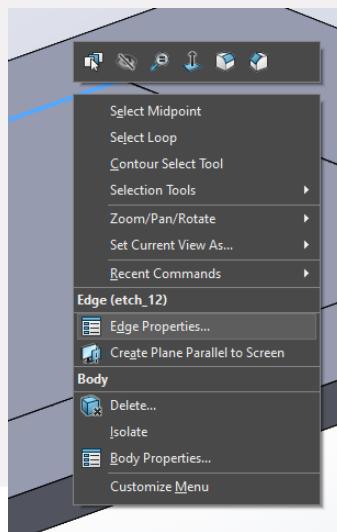
4.2.8. A feature with the name EtchFeature1 is created at the bottom of your Feature Manager Design Tree. The faces associated with the feature are coloured red to indicate that feature has been applied.



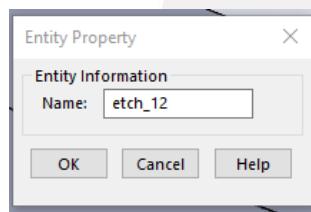
4.2.9. Now, go to right click the edge of the feature that you have defined as etching. You can notice that the edge you selected has a property of etch XX. Click on the double down arrow button to expand for more options.



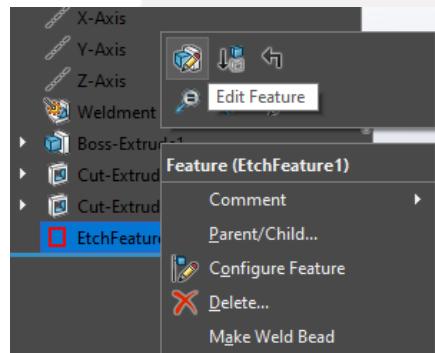
4.2.10. Click on Edge Properties...



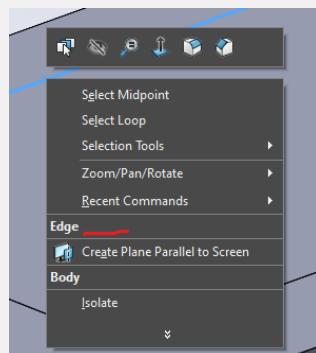
4.2.11. [Prep DXF Export](#) macro will colour any edge that has "etch" text in the Entity Property.



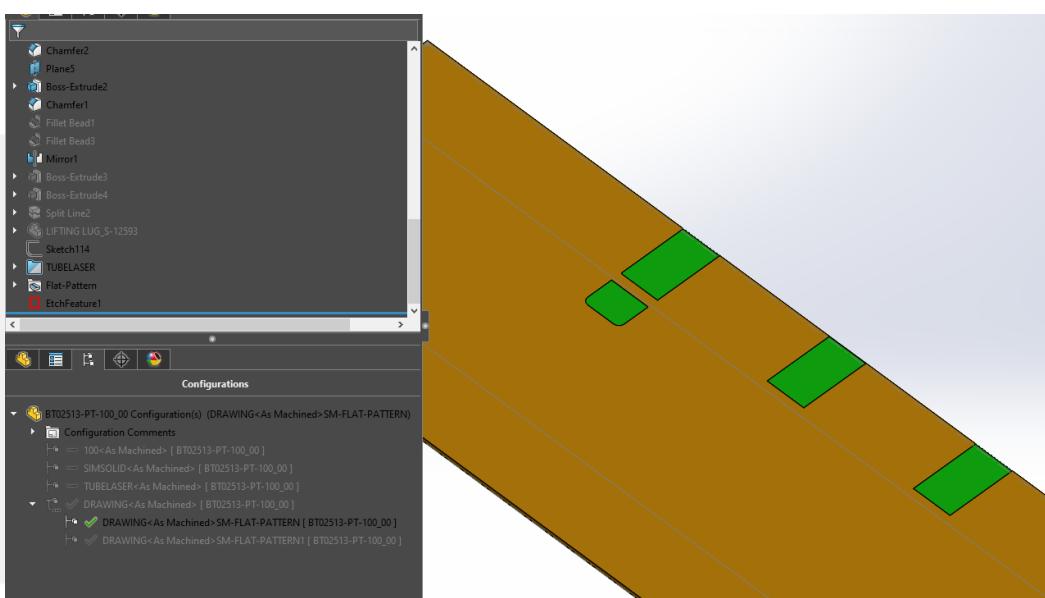
4.2.12. In case you have selected the wrong feature, you can go back to edit your Etch Feature and remove or add on more feature as your wish.



4.2.13. Once removed the feature, the Entity Properties on the edge will be removed as well.

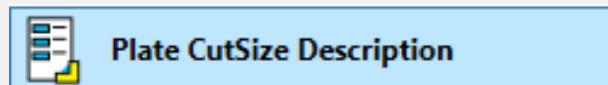


4.2.14. If the etching is on the model that is pressed or flattened, add the Etch Feature in flatten configuration so that the result will be consistent.

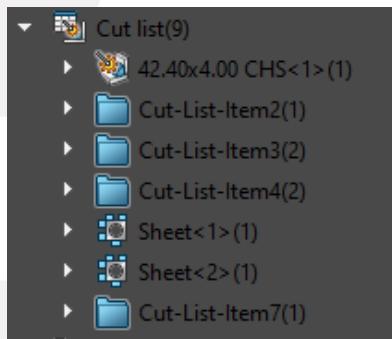


4.2.15. When removing the feature from Etch Feature, sometimes it will set different colour on the feature. This is due to the render material used having a secondary colour. In that case, you can set the secondary colour same as the dominant colour, then run the Macro again.

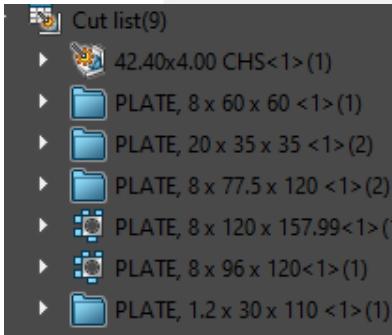
4.3. Plate Cut Size Description



- 4.3.1. Create a 3D Bounding Box and add Description according to a specific format for each cut list folder that has either "cut-list-item" or "sheet" in the name. It only supports part file.
- 4.3.2. Open the part you wish to add 3D Bounding Box and click on Plate Weld Note button.
- 4.3.3. Initially the body folder structure is as below:



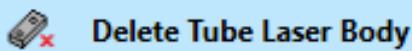
- 4.3.4. After running the Macro:



- 4.3.5. Sheet metal body description filled with same syntax as cut list item.

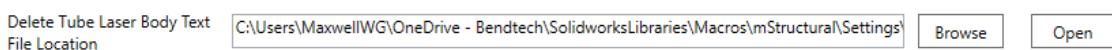
PLATE, 8 x 120 x 157.99 <1>	4	Bounding Box Area	Text	'SW-Bounding Box Area@@@PLATE, 8 x 120 x 157.99<1> @BT07714-PT-104_00,	1
PLATE, 8 x 96 x 120 <1>	5	Bounding Box Area-Blank	Text	'SW-Bounding Box Area-Blank@@@PLATE, 8 x 120 x 157.99<1> @BT07714-PT-1	1
PLATE, 1.2 x 30 x 110 <1>	6	Cutting Length-Outer	Text	'SW-Cutting Length-Outer@@@PLATE, 8 x 120 x 157.99<1> @BT07714-PT-104_	6
	7	Cutting Length-Inner	Text	'SW-Cutting Length-Inner@@@PLATE, 8 x 120 x 157.99<1> @BT07714-PT-104_0	3
	8	Cut Outs	Text	'SW-Cut Outs@@@PLATE, 8 x 120 x 157.99<1> @BT07714-PT-104_00.SLDPR	2
	9	Bends	Text	'SW-Bends@@@PLATE, 8 x 120 x 157.99<1> @BT07714-PT-104_00.SLDPR'	1
	10	Bend Allowance	Text	'SW-Bend Allowance@@@PLATE, 8 x 120 x 157.99<1> @BT07714-PT-104_00.SLD	0
	11	MATERIAL	Text	'SW-Material@@@PLATE, 8 x 120 x 157.99<1> @BT07714-PT-104_00.SLDPR'	G
	12	Mass	Text	'SW-Mass@@@PLATE, 8 x 120 x 157.99<1> @BT07714-PT-104_00.SLDPR'	0
	13	Description	Text	PLATE, 'SW-Sheet Metal Thickness@@@PLATE, 8 x 120 x 157.99<1> @BT07714-P	P

4.4. Delete Tube Laser Body



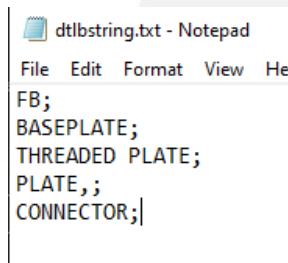
4.4.1. Delete all body in weldment cut list that match the pre-defined string in setting. It only supports part file.

4.4.2. Set the location of the string text file in setting.

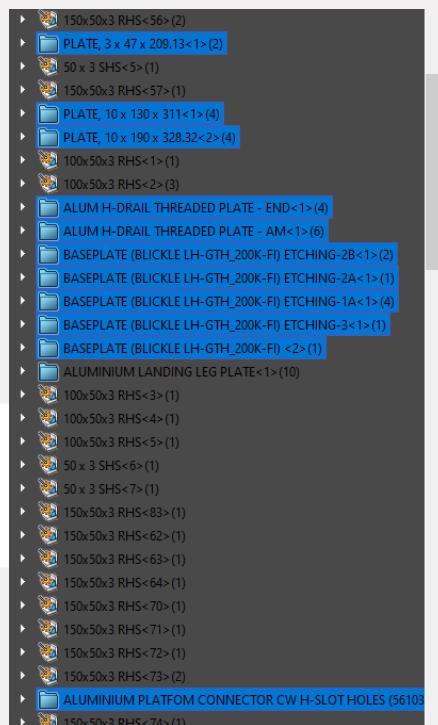


4.4.3. You can click on the “Default” button at the setting to set it to Bend Tech default location of this setting file. You might need to change the front part of the default string if it is different from your own setting.

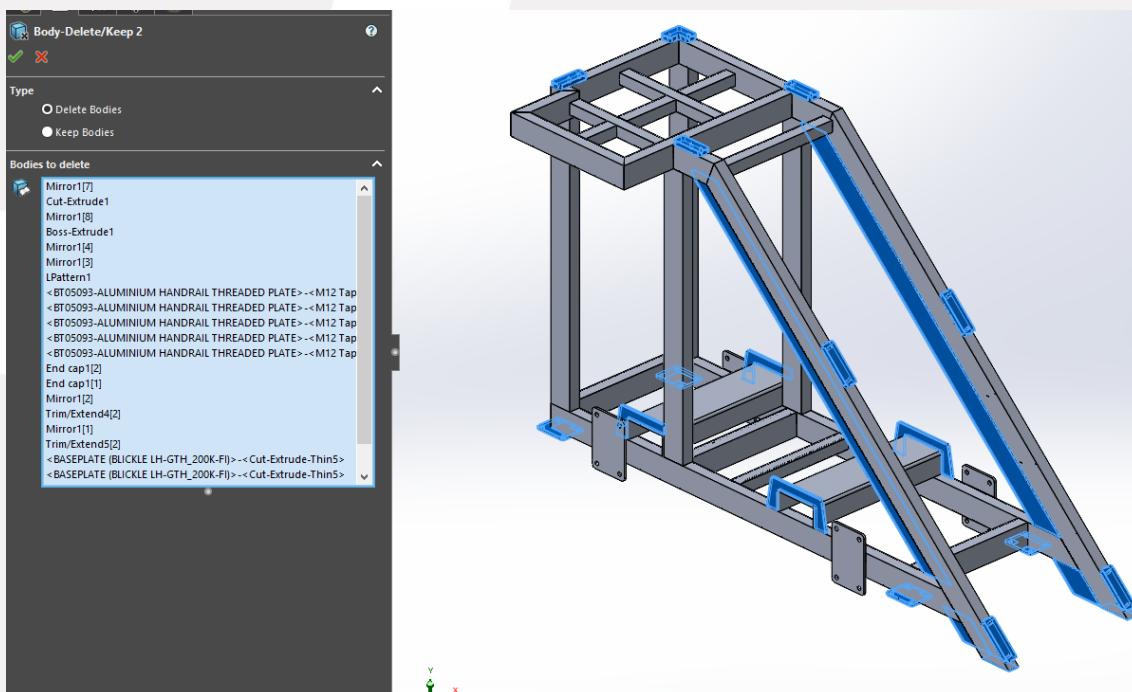
4.4.4. If you cannot access to the default setting file, you may create a similar text file and point the setting to this setting text file. For the text file, each string is separated by “;” symbol, any cut list in the folder that matches any of the strings will be deleted. New line and the last “;” are not necessary, just for formatting purposes only.



4.4.5. Open the part you wish to delete the body and press the Delete Tube Laser Body button. All bodies in the cut list folder that match the string will be selected.



4.4.6. A Body-Delete/Keep feature will be created.



4.5. Naming Project

Naming Project

4.5.1. A Macro to quickly rename your assembly structure according to the standard as stated below:

BT number: 99999

Main Assembly: BT99999-AS-100

Part file in main assembly: BT99999-PT-101, BT99999-PT-102...

Sub assembly file: BT99999-AS-150, BT99999-AS-200...

Part file in sub assembly BT99999-AS-150: BT99999-PT-151, BT99999-PT-152

Fastener assembly: BT99999-FT-110, BT99999-FT-120...

Any read-only, envelope or suppressed component will be omitted. Rename will fail if the component is renamed to a component which already exists physically on your disk.

4.5.2. Video: <https://youtu.be/9mqfVOBWfds>

4.5.3. Click on the Naming Project button. A tree view will be displayed.

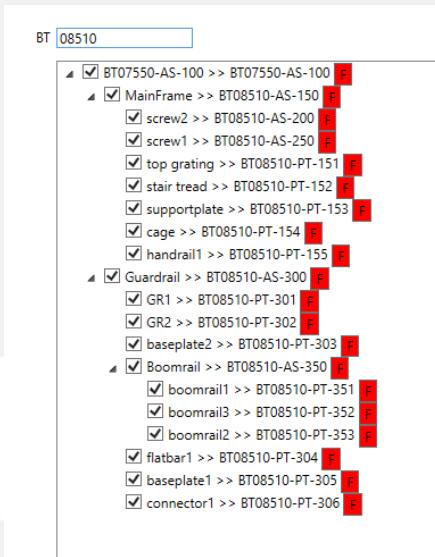


4.5.4. Each item in the tree view contains the following elements from left to right:

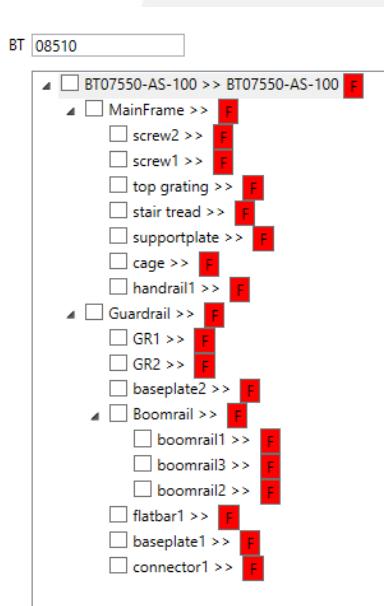
- 4.5.4.1. A check box to include or exclude the component.
- 4.5.4.2. Original component name.
- 4.5.4.3. ">>" symbol to separate original name with new name.
- 4.5.4.4. New component name.
- 4.5.4.5. A toggle button to set fastener flag for this component.

connector1 >> BT07550-PT-306 F

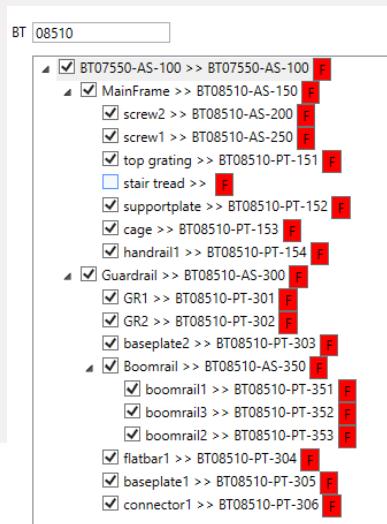
4.5.5. BT number is at the top of the interface, it is extracted from main assembly file name. Users may change the BT number manually. You can notice the new component will change dynamically with BT number. However, the main assembly's name will not change.



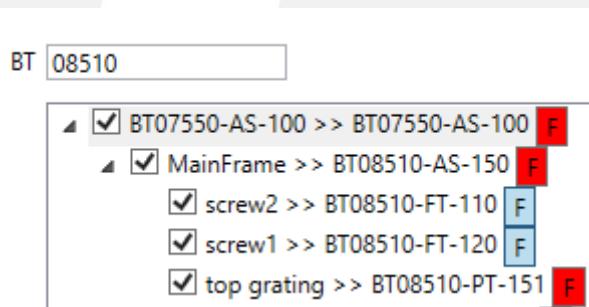
4.5.6. Unchecked/Checked on the parent node will do the same to its child node as well.



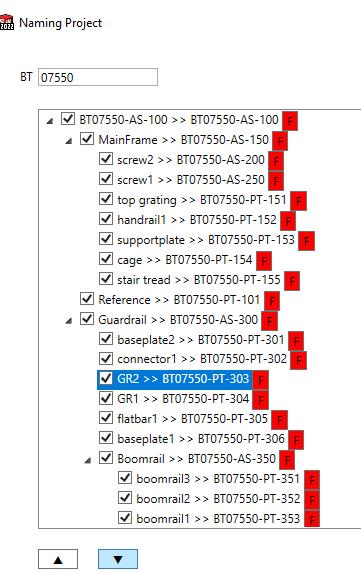
4.5.7. Unchecked/Checked on a component will trigger the rename Macro. The new component name will be assigned according to the new configuration.



4.5.8. Toggle on fastener toggle button will mark that component as fastener. The new component name will be re-assigned according to the new configuration.



4.5.9. Select any item that you wish to move up or down in the list using the ▲ or ▼ button.



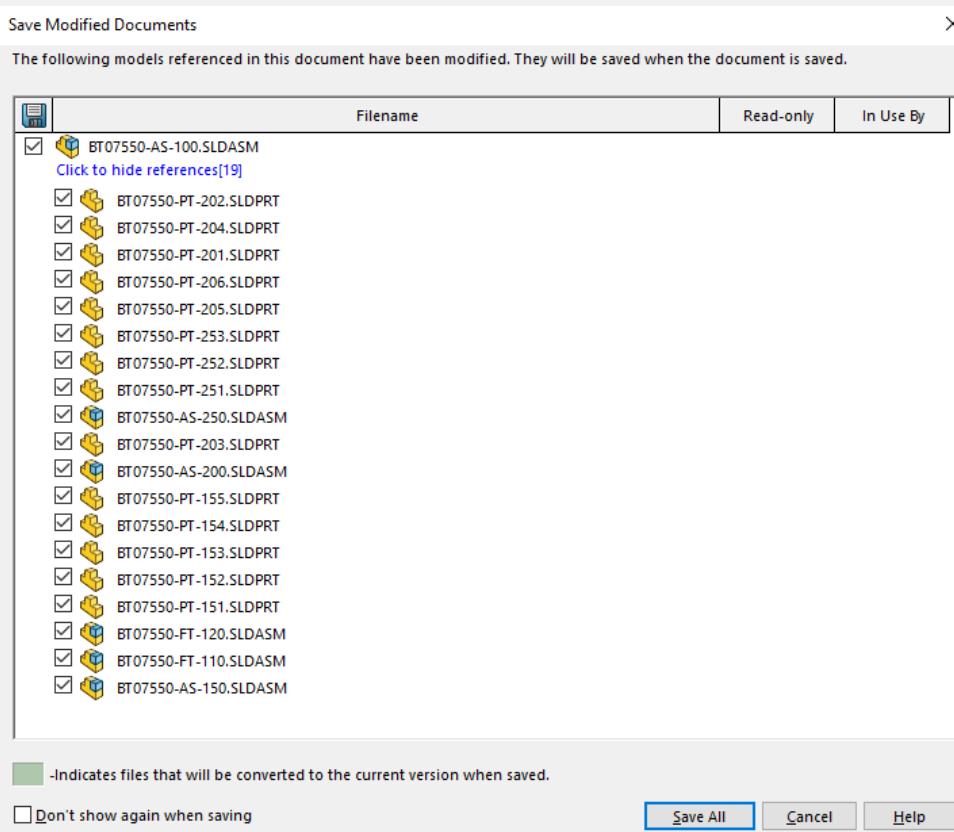
4.5.10. Once everything is set, press the Confirm button.



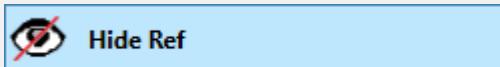
4.5.11. A message will be displayed to show rename status.



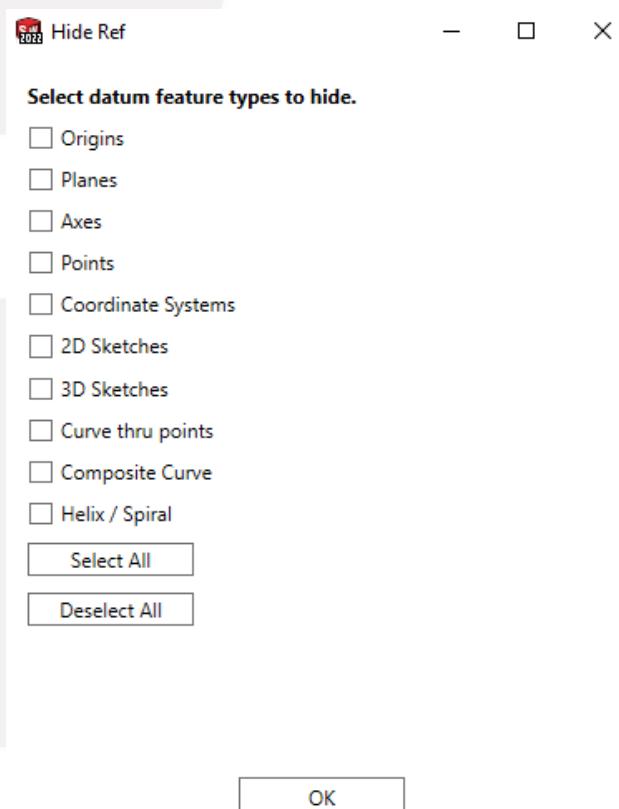
4.5.12. Double check your model if further rename is required. Once everything is confirmed, save your file to finalize the rename operation.



4.6. Hide Ref (Model)

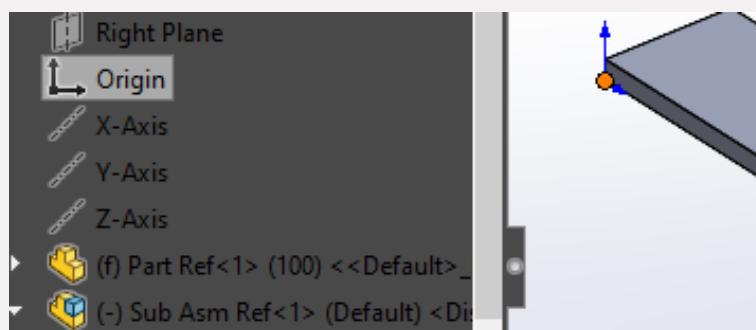


- 4.6.1. A macro to hide any selected feature found in the active document. This section explains the Macro when running in Part or Assembly document. For Drawing document, refer to [Hide Ref \(Drawing\)](#)
- 4.6.2. Open any document that you want to hide specific features. Click on the Hide Ref Macro button.
- 4.6.3. An interface listing all the supported feature types will be shown.

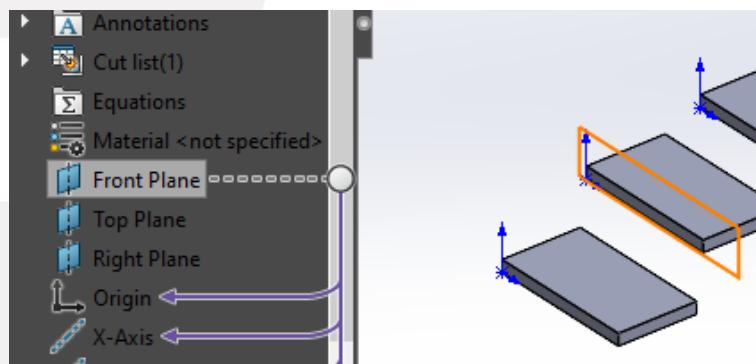


4.6.4. Below are the supported feature types:

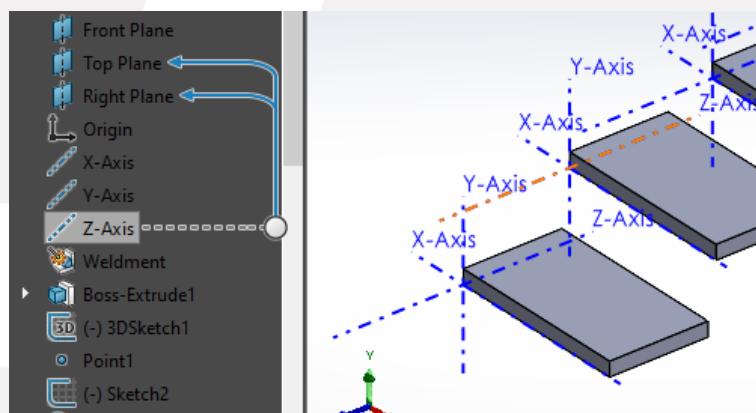
4.6.4.1. Origins



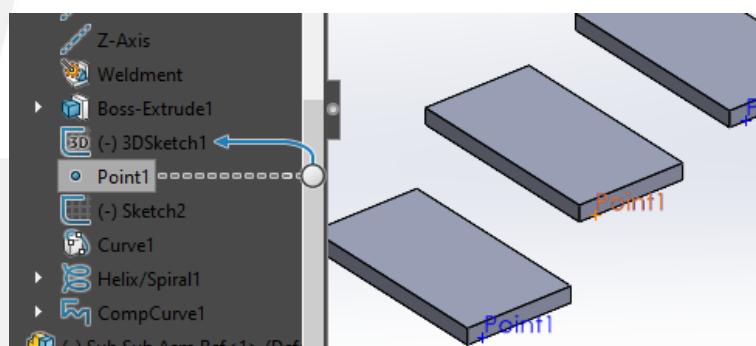
4.6.4.2. Planes



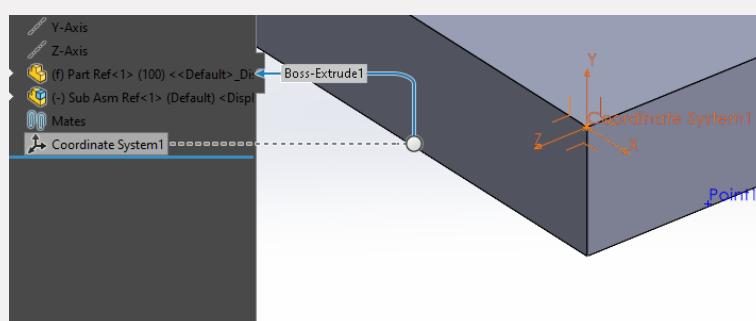
4.6.4.3. Axes



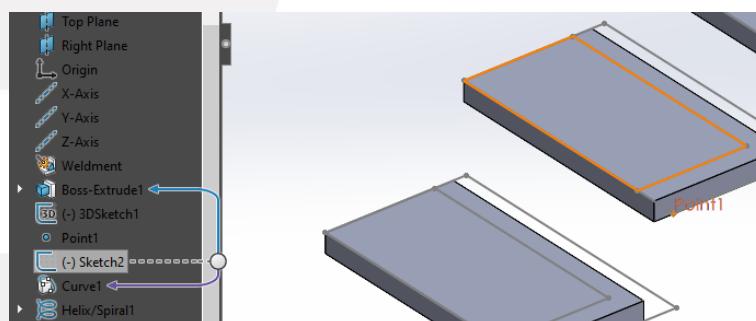
4.6.4.4. Points



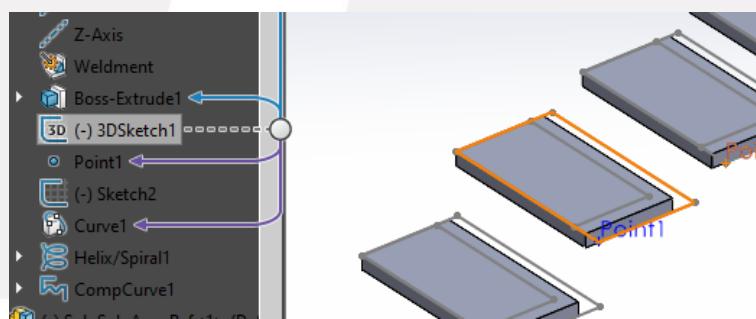
4.6.4.5. Coordinate Systems



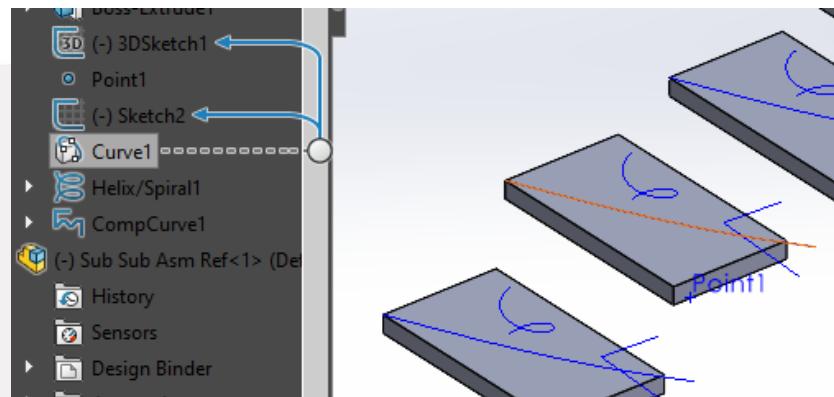
4.6.4.6. 2D Sketches



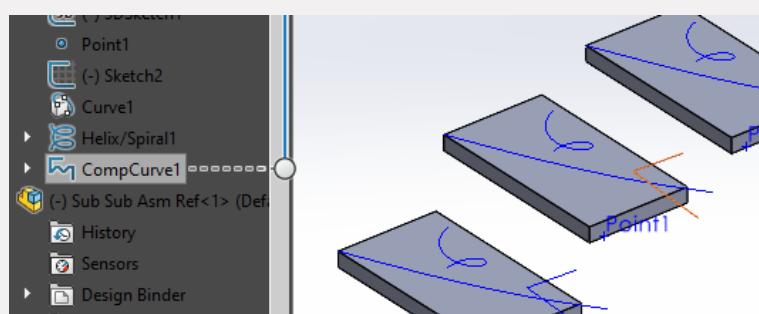
4.6.4.7. 3D Sketches



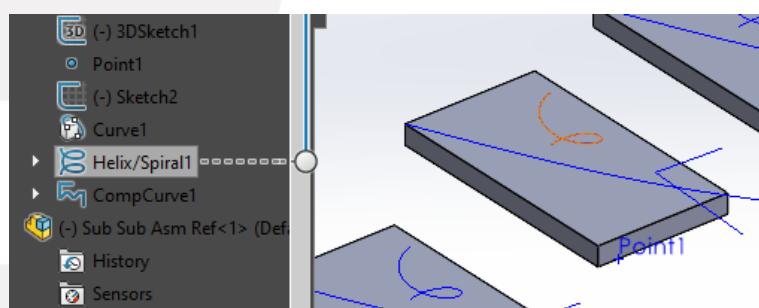
4.6.4.8. Curve thru points



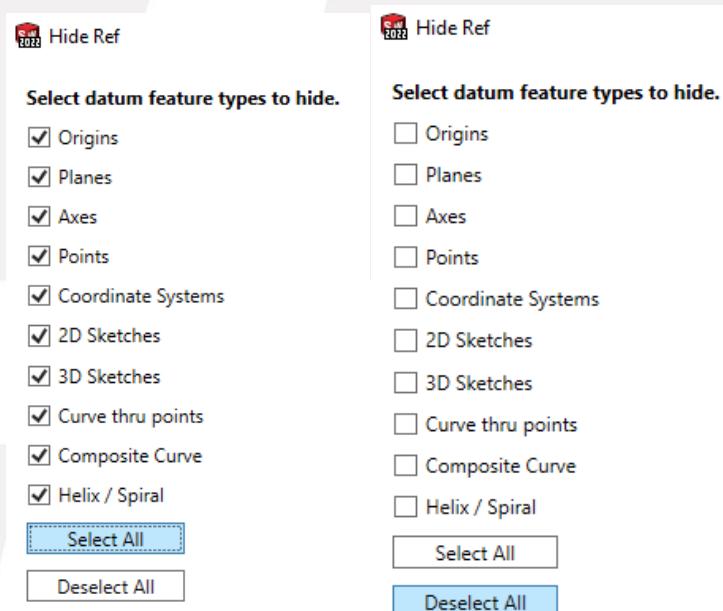
4.6.4.9. Composite Curve



4.6.4.10. Helix / Spiral

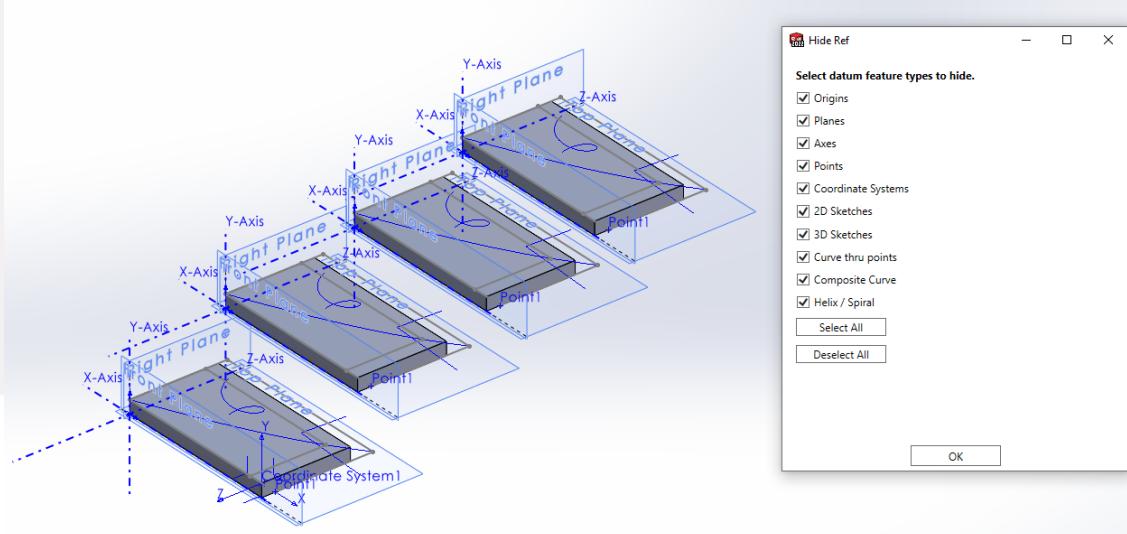


4.6.5. “Select All” button checks all the feature types while “Deselect All” button unchecks all the feature types.

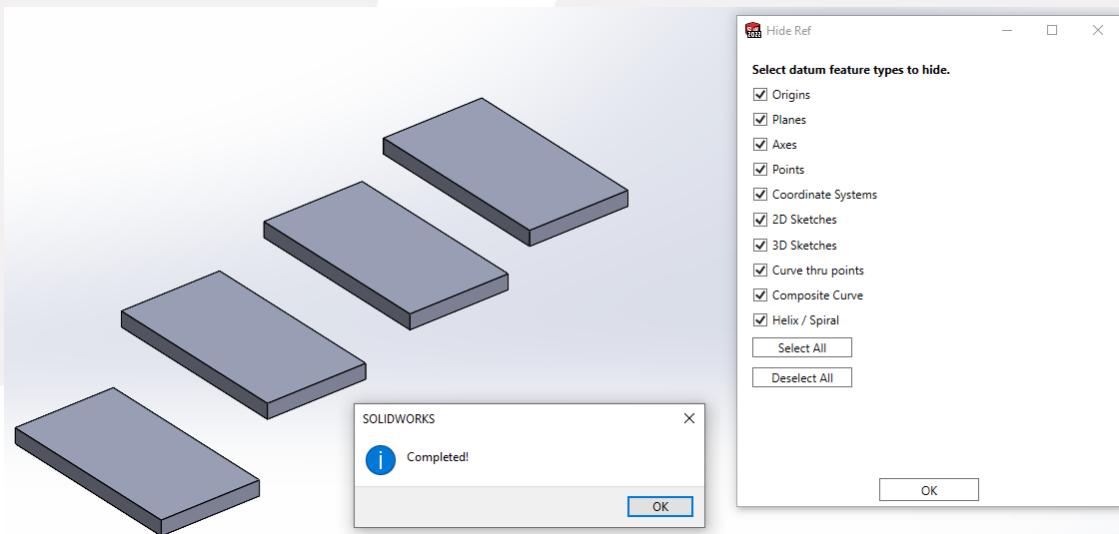


4.6.6. Use the Select All button, Deselect All button and manual check or uncheck to select any feature that you wish to hide. Then Click OK.

4.6.6.1. Before:



4.6.6.2. After:



5. Automation (Drawing)

5.1. Sort



Sort

5.1.1. To sort weldment cut list in drawing as per sequence below:

5.1.1.1. RHS > SHS > CHS > Tube > I Beam > ANGLE > Machine Rod > Round Bar
> PFC > UB > UC > CDS > C Channel > FB > PLATE > etc...

5.1.1.2. The Macro detects the type of cut list through the custom property
"description":

5.1.1.2.1. Rhs: Last 3 characters are "rhs"

5.1.1.2.2. Shs: Last 3 characters are "shs"

5.1.1.2.3. Chs: Last 3 characters are "chs"

5.1.1.2.4. Tube: first 4 characters are "tube"

5.1.1.2.5. I beam: first 6 characters are "I beam"

5.1.1.2.6. Angle: First 5 characters are "angle"

5.1.1.2.7. Machine rod: first 11 characters are "machine rod"

5.1.1.2.8. Round bar: first 9 characters are "round rod"

5.1.1.2.9. Pfc: Last 3 characters are "pfc"

5.1.1.2.10. Ub: first 3 characters are digits and next 2 characters are "ub"

5.1.1.2.11. Uc: first 3 characters are digits and next 2 characters are "uc"

5.1.1.2.12. Cds: last 3 characters are "cds"

5.1.1.2.13. C Channel: first character is "c" and the next character is digit

5.1.1.2.14. Fb: First 2 characters are "fb"

5.1.1.2.15. Plate: first 5 characters are "plate"

5.1.1.2.16. If the description does not meet any condition above, it will be categorised as etc and put at the bottom of the cut list.

5.1.1.3. It only supports drawing files.

5.1.2. Select a weldment cut list by left clicking the top left move symbol of a cut list.

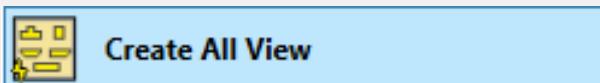
A	B	C	D	E
NO.	QTY.	DESCRIPTION	LENGTH	MATERIAL
1	2	460UB67.1	3000	GRADE 300 STEEL AS 3679.1
2	12	PLATE, 16 x 90.8 x 358		GRADE 350 STEEL AS 3678
3	2	PLATE, 16 x 90.8 x 426.6		GRADE 350 STEEL AS 3678
4	2	PLATE, 20 x 100 x 512.9		GRADE 350 STEEL AS 3678
5	2	200.0x100.0x9.0 RHS	144.9	GRADE 350 STEEL AS 1163
6	4	150UC37.2	854.4	GRADE 300 STEEL AS 3679.1
7	2	PLATE, 10 x 350 x 441		GRADE 350 STEEL AS 3678
8	3	200UC46.2	931.5	GRADE 300 STEEL AS 3679.1
9	4	PLATE, 16 x 150 x 181		GRADE 350 STEEL AS 3678
10	2	75.0x75.0x4.0 SHS	1163.4	GRADE 350 STEEL AS 1163
11	4	75.0x75.0x4.0 SHS	553.6	GRADE 350 STEEL AS 1163
12	4	PLATE, 10 x 328.3 x 363.5		GRADE 350 STEEL AS 3678
13	2	PLATE, 10 x 260 x 1430		GRADE 350 STEEL AS 3678
14	2	PLATE, 10 x 507.1 x 1130		GRADE 350 STEEL AS 3678
15	2	PLATE, 10 x 260 x 1130		GRADE 350 STEEL AS 3678
16	2	PLATE, 16 x 147 x 259.4		GRADE 350 STEEL AS 3678
17	2	PLATE, 16 x 147 x 217.2		GRADE 350 STEEL AS 3678
18	2	PLATE, 20 x 490 x 1254		GRADE 350 STEEL AS 3678
19	2	PLATE, 10 x 507.1 x 1430		GRADE 350 STEEL AS 3678
20	2	PLATE, 16 x 190 x 454		GRADE 350 STEEL AS 3678

5.1.3. Click the Macro button.

A	B	C	D	E
NO.	QTY.	DESCRIPTION	LENGTH	MATERIAL
1	2	200.0x100.0x9.0 RHS	144.9	GRADE 350 STEEL AS 1163
2	4	75.0x75.0x4.0 SHS	553.6	GRADE 350 STEEL AS 1163
3	2	75.0x75.0x4.0 SHS	1163.4	GRADE 350 STEEL AS 1163
4	2	460UB67.1	3000	GRADE 300 STEEL AS 3679.1
5	4	150UC37.2	854.4	GRADE 300 STEEL AS 3679.1
6	3	200UC46.2	931.5	GRADE 300 STEEL AS 3679.1
7	2	PLATE, 10 x 260 x 1130		GRADE 350 STEEL AS 3678
8	2	PLATE, 10 x 260 x 1430		GRADE 350 STEEL AS 3678
9	4	PLATE, 10 x 328.3 x 363.5		GRADE 350 STEEL AS 3678
10	2	PLATE, 10 x 350 x 441		GRADE 350 STEEL AS 3678
11	2	PLATE, 10 x 507.1 x 1130		GRADE 350 STEEL AS 3678
12	2	PLATE, 10 x 507.1 x 1430		GRADE 350 STEEL AS 3678
13	2	PLATE, 16 x 147 x 217.2		GRADE 350 STEEL AS 3678
14	2	PLATE, 16 x 147 x 259.4		GRADE 350 STEEL AS 3678
15	4	PLATE, 16 x 150 x 181		GRADE 350 STEEL AS 3678
16	2	PLATE, 16 x 190 x 454		GRADE 350 STEEL AS 3678
17	12	PLATE, 16 x 90.8 x 358		GRADE 350 STEEL AS 3678
18	2	PLATE, 16 x 90.8 x 426.6		GRADE 350 STEEL AS 3678
19	2	PLATE, 20 x 100 x 512.9		GRADE 350 STEEL AS 3678
20	2	PLATE, 20 x 490 x 1254		GRADE 350 STEEL AS 3678

5.1.4. The weldment cut list will be sorted accordingly. All categories except plate and etc will be sorted according to group followed by length. Plate and etc will be sorted in ascending order.

5.2. Create All View

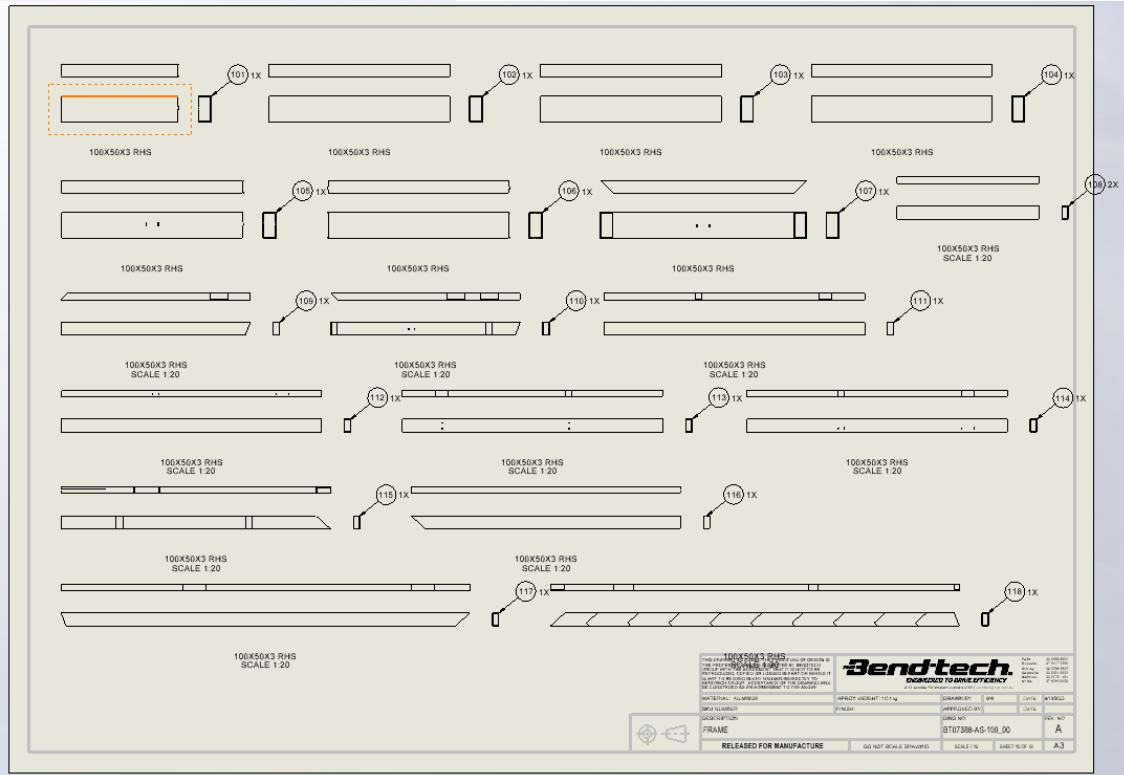


5.2.1. Macro to generate drawing view for each row of the selected weldment cut list. It only supports Drawing document and a weldment cut list must be selected before running the Macro.

5.2.2. Open a drawing and select a weldment cut list. Then, click on the Create All View button.

A	B	C	D	E
NO.	QTY.	DESCRIPTION	LENGTH	MATERIAL
1	2	460UB67.1	3000	GRADE 300 STEEL AS 3679.1
2	12	PLATE, 16 x 90.8 x 358		GRADE 350 STEEL AS 3678
3	2	PLATE, 16 x 90.8 x 426.6		GRADE 350 STEEL AS 3678
4	2	PLATE, 20 x 100 x 512.9		GRADE 350 STEEL AS 3678
5	2	200.0x100.0x9.0 RHS	144.9	GRADE 350 STEEL AS 1163
6	4	150UC37.2	854.4	GRADE 300 STEEL AS 3679.1
7	2	PLATE, 10 x 350 x 441		GRADE 350 STEEL AS 3678
8	3	200UC46.2	931.5	GRADE 300 STEEL AS 3679.1
9	4	PLATE, 16 x 150 x 181		GRADE 350 STEEL AS 3678
10	2	75.0x75.0x4.0 SHS	1163.4	GRADE 350 STEEL AS 1163
11	4	75.0x75.0x4.0 SHS	553.6	GRADE 350 STEEL AS 1163
12	4	PLATE, 10 x 328.3 x 363.5		GRADE 350 STEEL AS 3678
13	2	PLATE, 10 x 260 x 1430		GRADE 350 STEEL AS 3678
14	2	PLATE, 10 x 507.1 x 1130		GRADE 350 STEEL AS 3678
15	2	PLATE, 10 x 260 x 1130		GRADE 350 STEEL AS 3678
16	2	PLATE, 16 x 147 x 259.4		GRADE 350 STEEL AS 3678
17	2	PLATE, 16 x 147 x 217.2		GRADE 350 STEEL AS 3678
18	2	PLATE, 20 x 490 x 1254		GRADE 350 STEEL AS 3678
19	2	PLATE, 10 x 507.1 x 1430		GRADE 350 STEEL AS 3678
20	2	PLATE, 16 x 190 x 454		GRADE 350 STEEL AS 3678

5.2.3. This Macro will create a drawing view for each row of the selected weldment cut list together with top and right projected view. New drawing sheets will be added to the drawing and the views will be generated in sequence from left to right and top to bottom. Once the drawing sheet is filled, a new sheet will be created, and the remaining drawing view will be generated on that sheet. The process will be repeated until all rows of the weldment cut list has been processed.



5.2.4. A note linked to the description of the cut list body also will be added to the parent view.

5.2.5. A balloon will be added to the right view.

5.2.6. Once completed, a message will be prompted to indicate all views have been generated successfully.

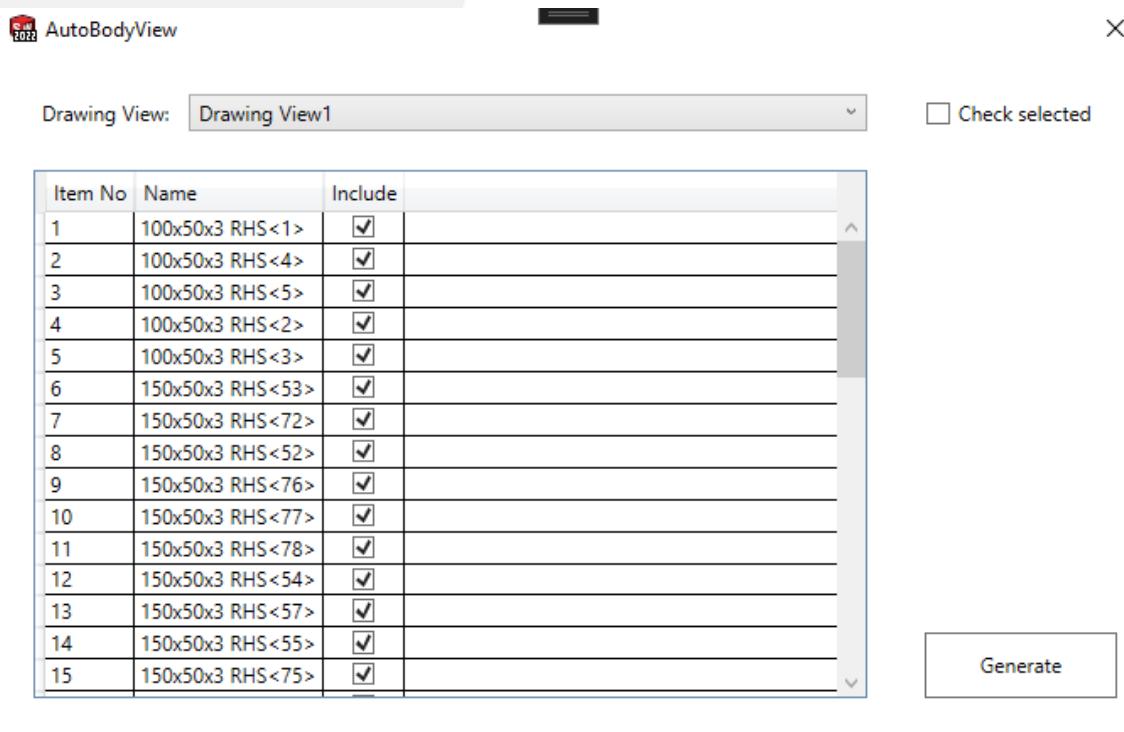
5.3. Auto View



5.3.1. To generate drawing views for each row of the selected weldment cut list. It only supports drawing files and a weldment cut list must be selected before running the Macro.

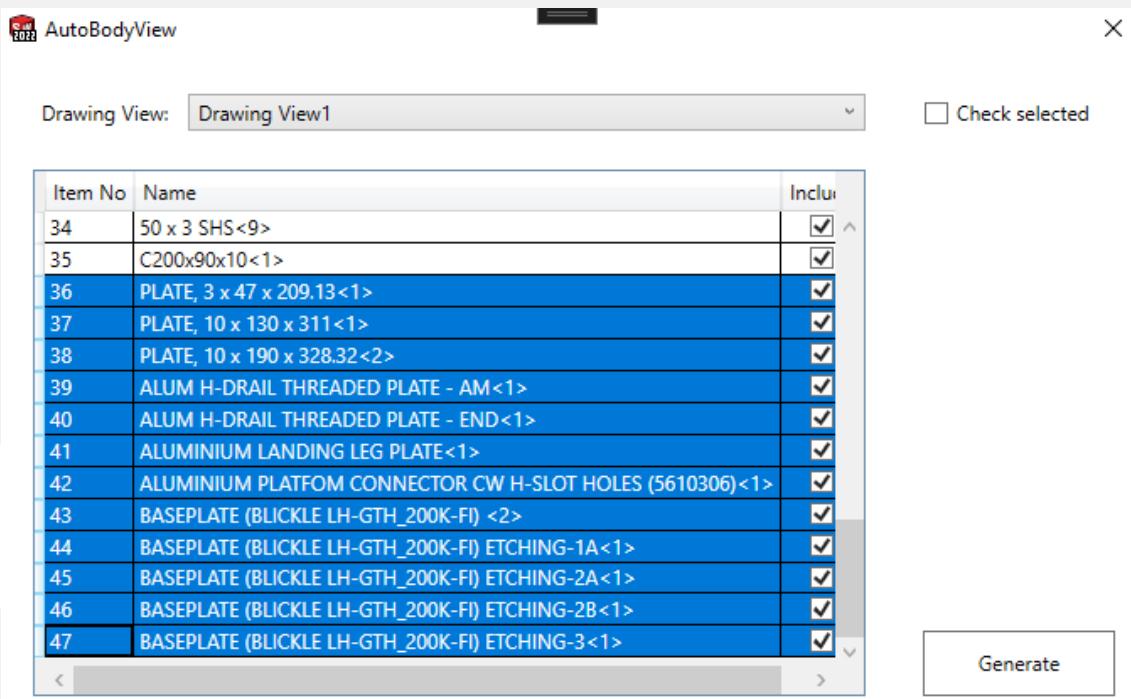
5.3.2. Video: <https://youtu.be/RU7rS64NSao>

5.3.3. Select a weldment cut list and Auto View Macro button. A window will be prompted for the user to select which item to generate view.

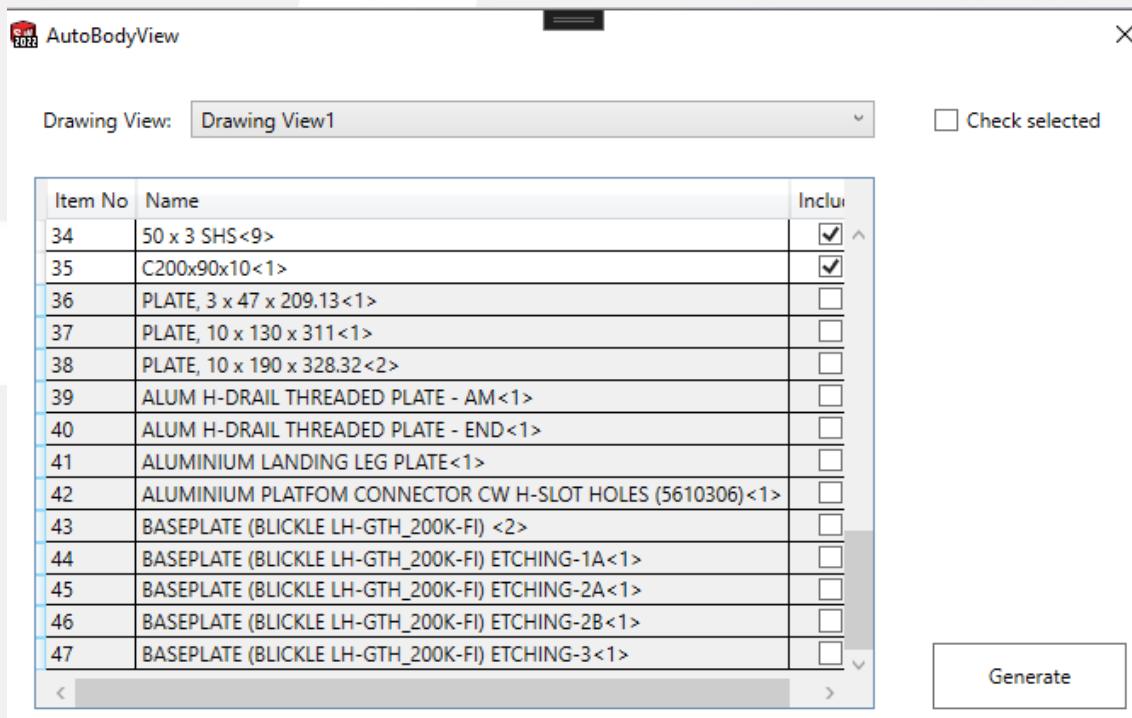


5.3.4. If the list is empty or the list is different from your cut list, try to select a different drawing view from the Drawing View dropdown.

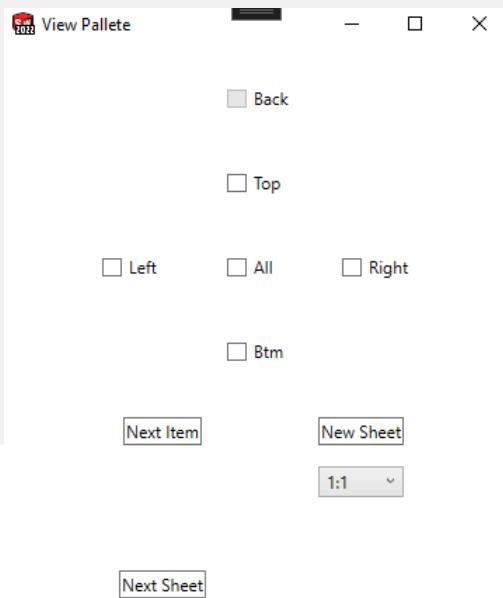
5.3.5. You can multi-select items using shift or ctrl button same as how you perform selection in window environment.



5.3.6. If you wish to exclude certain items, multi-select them and click twice on the "Check selected" to exclude the selected item.



- 5.3.7. Click on the Generate button to create a view.
 5.3.8. Another window will be prompted to manipulate the generated view.



- 5.3.9. All generated views will be placed at the top left corner of your drawing sheet.

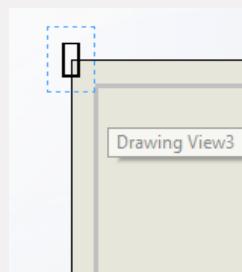
NO.	QTY.	DESCRIPTION
1	1	100x50x3 RHS
2	1	100x50x3 RHS
3	1	100x50x3 RHS
4	3	100x50x3 RHS
5	1	100x50x3 RHS
6	1	150x50x3 RHS
7	1	150x50x3 RHS
8	2	150x50x3 RHS

- 5.3.10. To move it to the new sheet, select your desired sheet format and click on the New Sheet button.

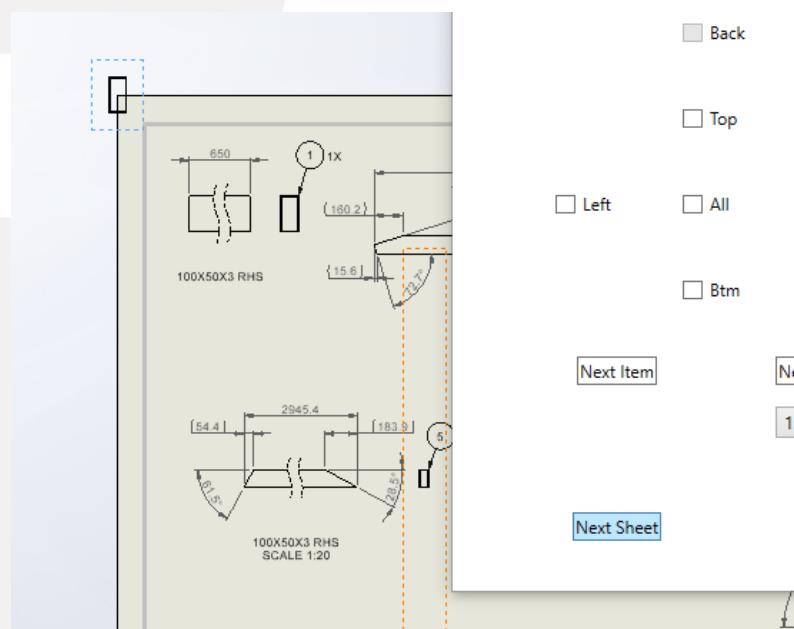
New Sheet

1:10

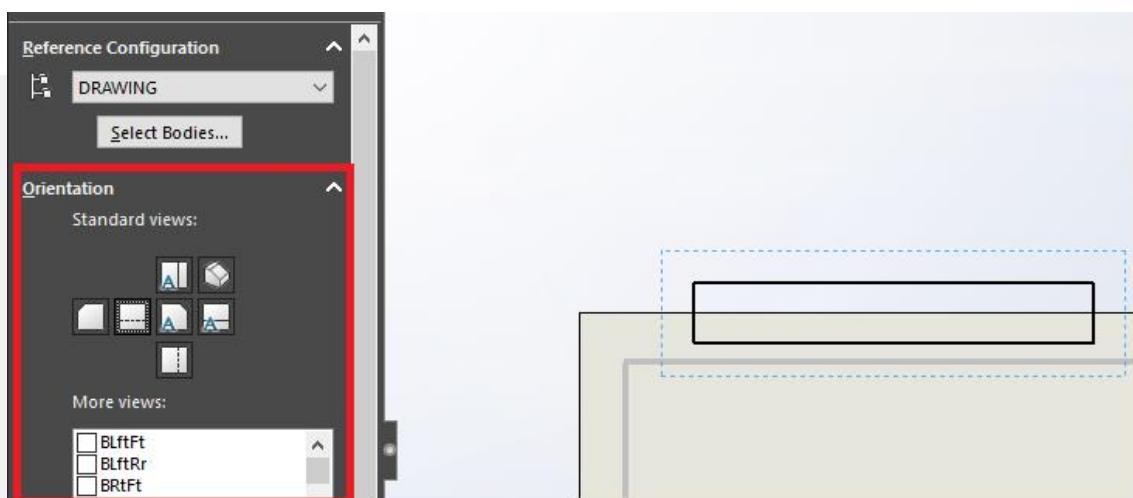
5.3.11. A new sheet will be created, and the view will be deleted and recreated on this sheet.



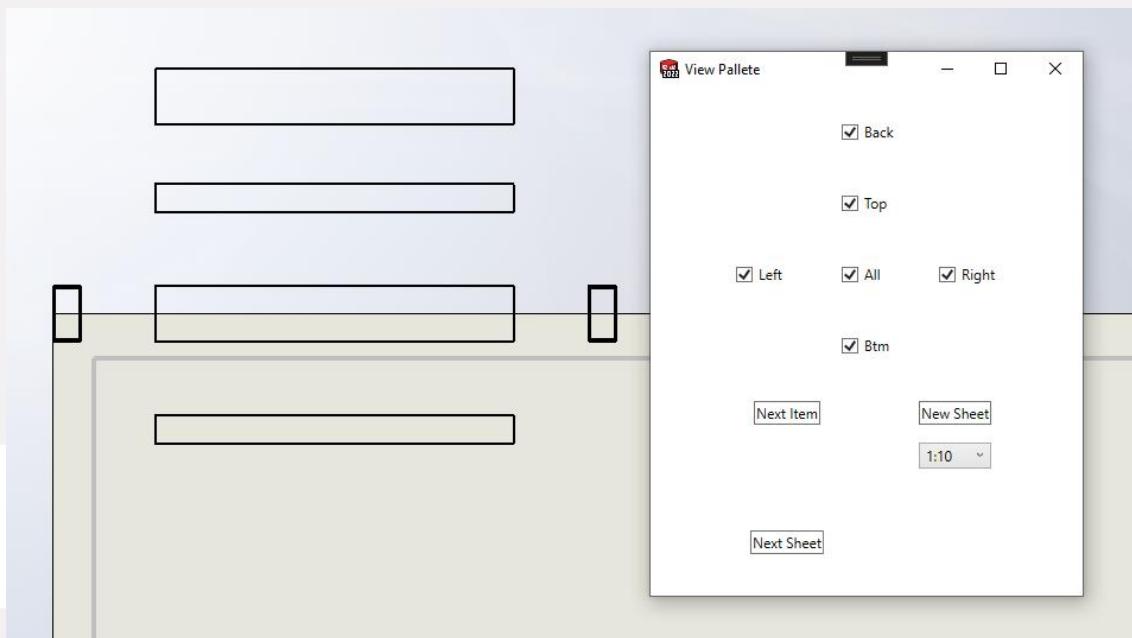
5.3.12. To move it to the next sheet, click on the Next Sheet button. The view will be deleted and recreated on the next sheet.



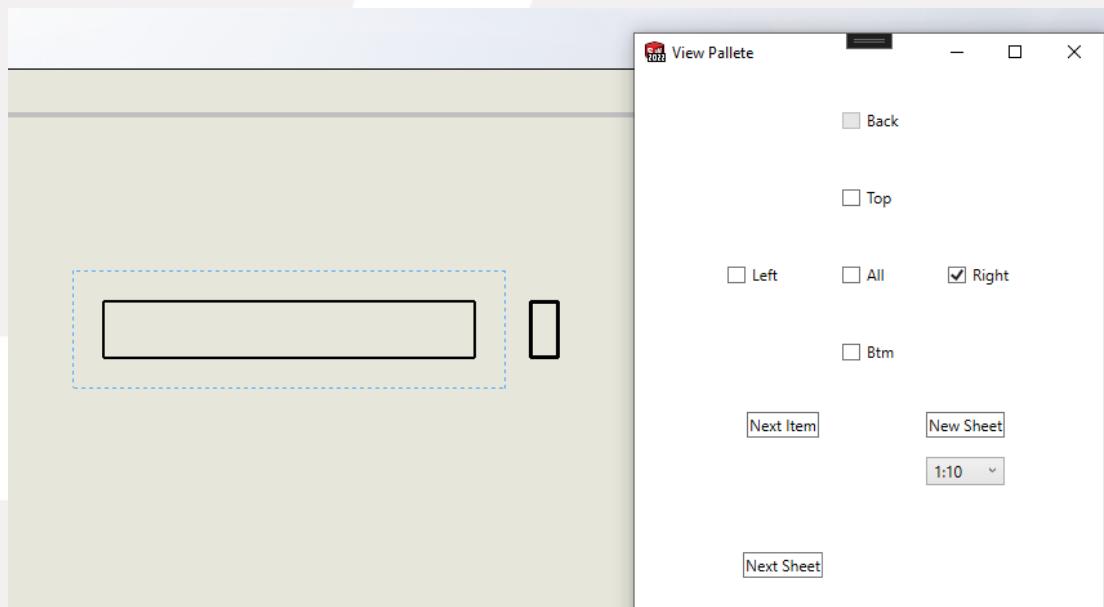
5.3.13. Try to choose the best parent view from SolidWorks function before proceeding.



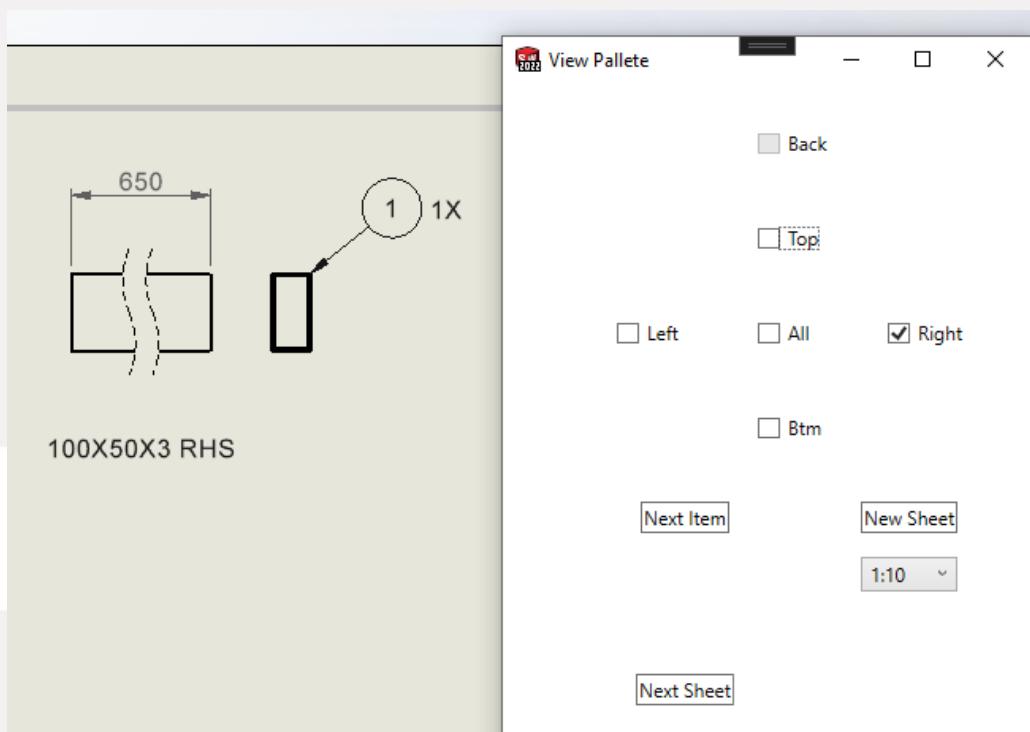
5.3.14. Once selected the best parent view, click on All checkbox to preview all the possible views that may be useful to present your dimension.



5.3.15. Uncheck any of the redundancy views and position the view accordingly.

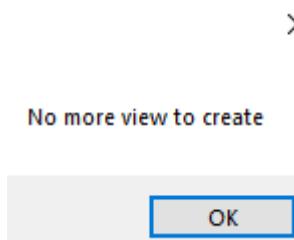


5.3.16. Detail the view using standard SolidWorks function or using another Macro from BTG SOLIDWORKS Add-In.

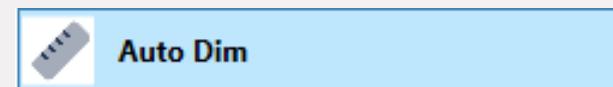


5.3.17. Click Next Item button to create another view.

5.3.18. Once all view has been processed, a message will be shown to indicate that no more view left to process.



5.4. Auto Dim

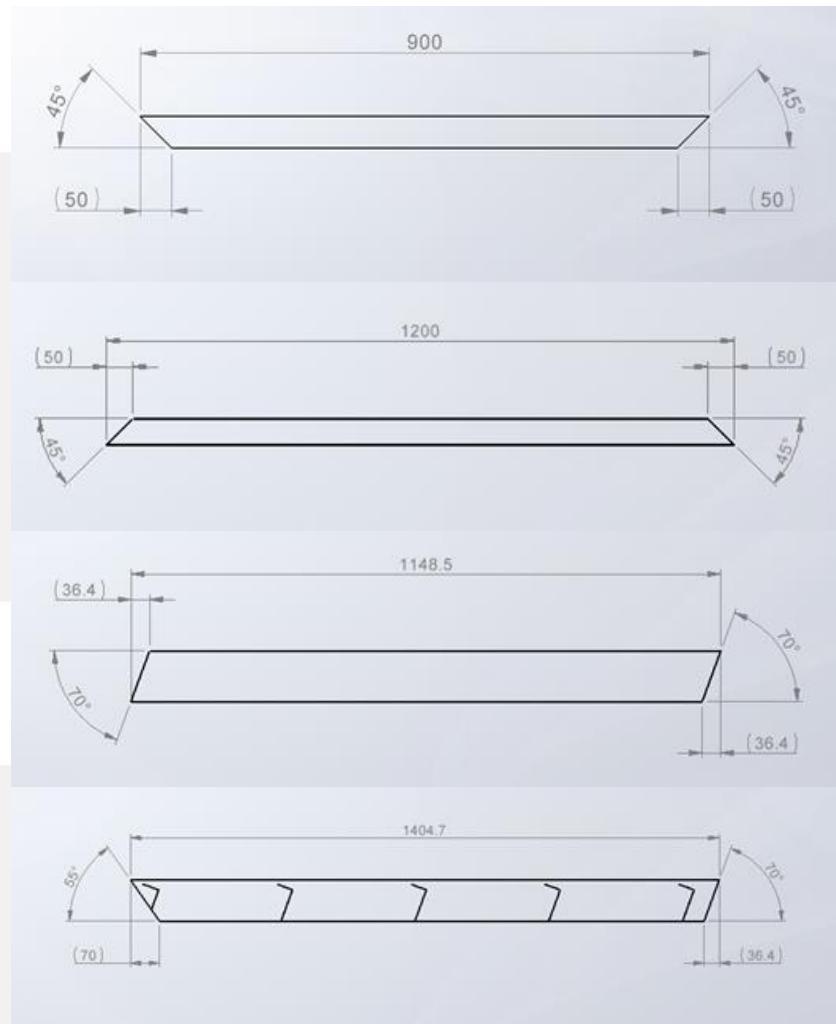


5.4.1. A Macro to dimension weldment member automatically. It only supports drawing files, and a view must be selected before running the Macro.

5.4.2. Supported profile:

- 5.4.2.1. Straight
- 5.4.2.2. Single angle
- 5.4.2.3. Dual angle
- 5.4.2.4. Tab from side view
- 5.4.2.5. Tab from top view

5.4.3. Single angle at both sides



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(08) 8231 1513

DARWIN
(08) 8963 5621



KALGOORLIE
(08) 9021 8300

NEWMAN
(08) 9175 1164

MT ISA
(07) 4743 6458

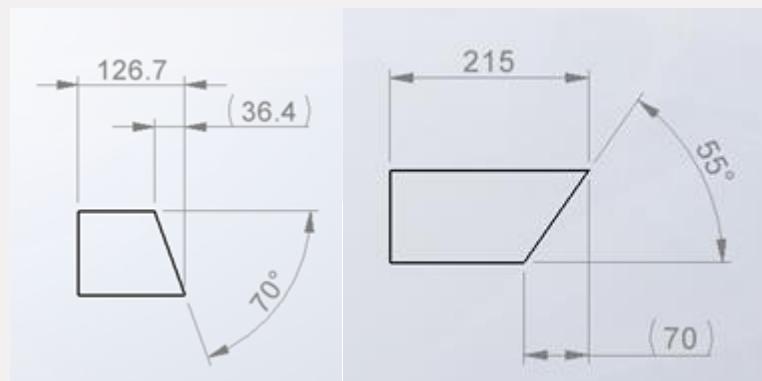
sales@bendtechgroup.com.au

www.bendtechgroup.com.au

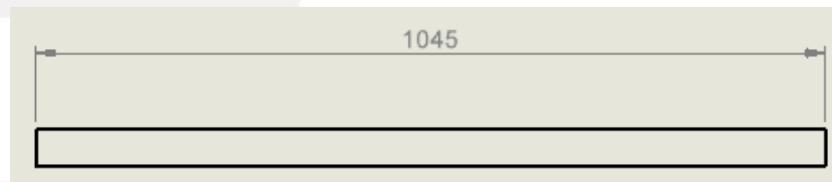
2-10 Kewdale Road, Welshpool WA 6106



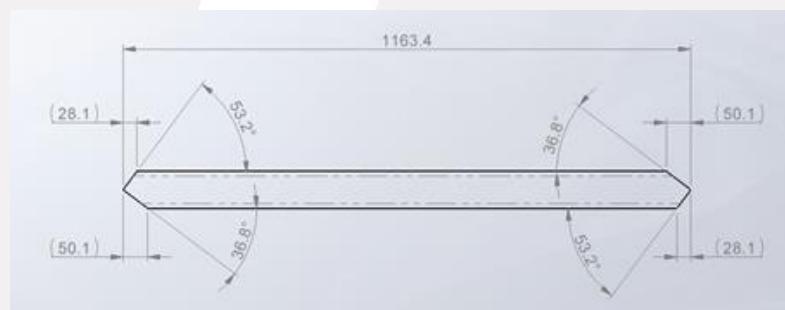
5.4.4. Single angle at one side and straight at another.



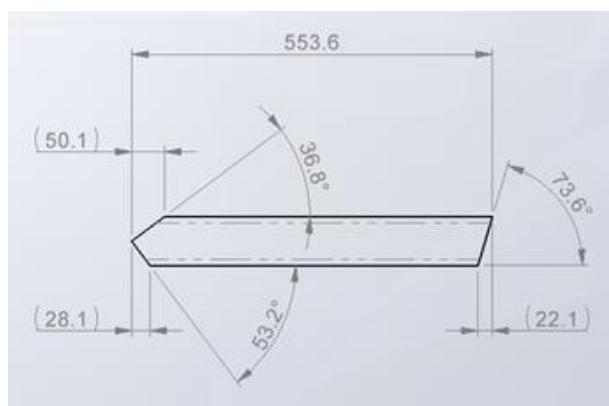
5.4.5. Straight at both side



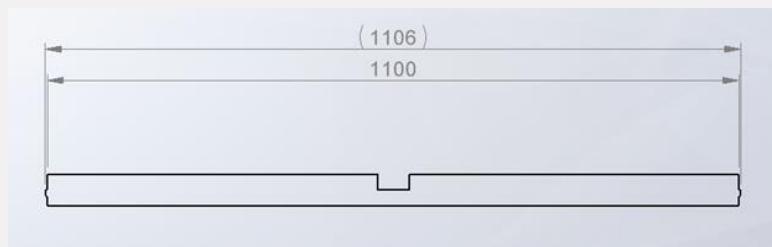
5.4.6. Dual angle at both side



5.4.7. Dual angle at one side, single angle at one side



5.4.8. Tab from side view.



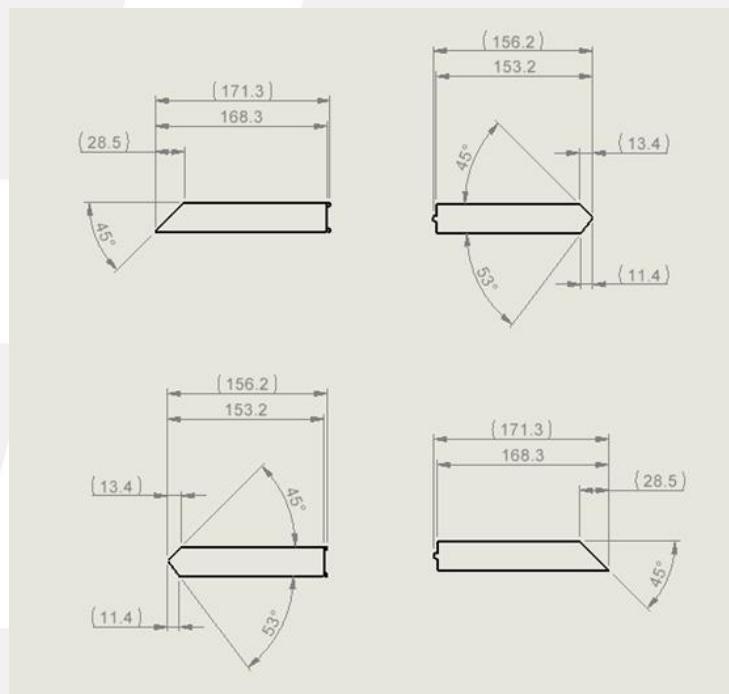
5.4.9. Tab from top view.



5.4.10. Tab one side and straight other side



5.4.11. Tab one side and single or dual angle other side



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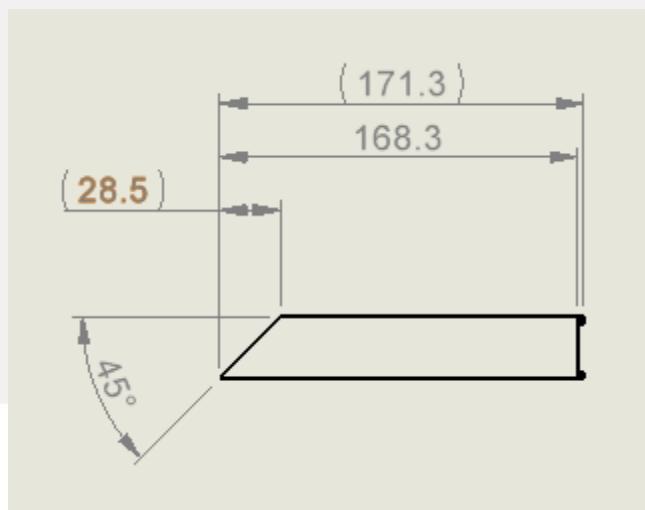
KALGOORLIE
(08) 9021 8300

NEWMAN
(08) 9175 1164

MT ISA
(07) 4743 6458



- 5.4.12. Open a drawing and select a view. Then click on Auto Dim button at BTG SOLIDWORKS Add-In task pane.
5.4.13. Dimension will be added automatically for supported type.



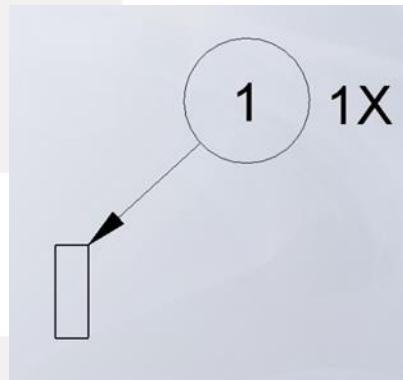
5.5. Balloon



5.5.1. A Macro to add balloon to a view automatically. It only supports drawing files, and a view must be selected before running the Macro.

5.5.2. Open a drawing and select a view. Then click on Auto Dim button at BTG SOLIDWROKS Add-In task pane.

5.5.3. Balloons with quantity will be added automatically to the selected view.



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5.6. Quick Note

A Quick Note

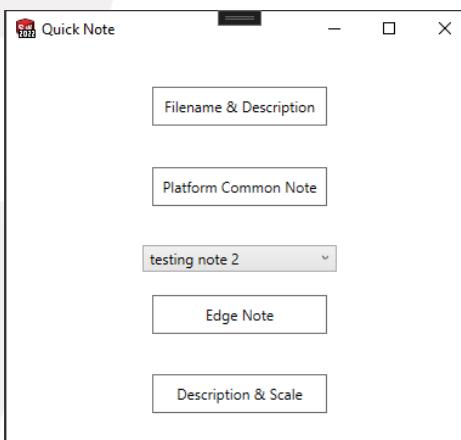
5.6.1. A Macro to quickly create notes on drawing view or entities. It only supports drawing files.

5.6.2. Set the list of string for edge note Macro in setting. Each string is separated by ";" symbol.

Edge Note

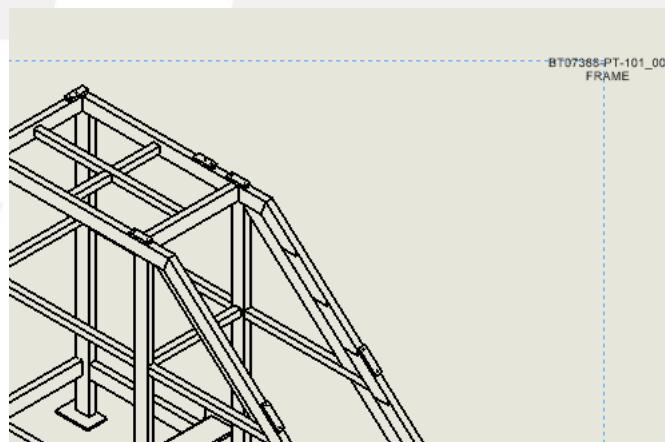
ETCHING;ETCHING (TYP);LINE ETCHING; LINE ETCHING (TYP);SLOT;2x SLOTS

5.6.3. Click on Quick Note button, another window will be prompted.



5.6.4. For the first button, "Filename & Description", select any view (can be multiple) and press the button.

5.6.5. A note will be created at the top right of the view outline.



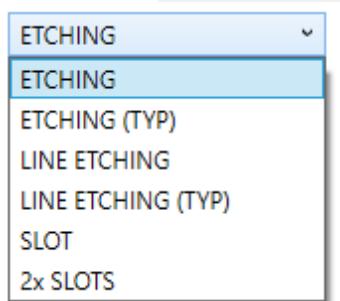
5.6.6. The content is linked to file:

`$PRPVIEW:"SW-File Name(File Name)"
$PRPVIEW:"Description"`

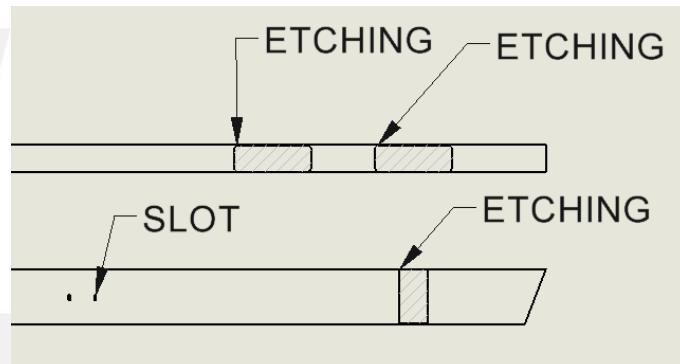
- 5.6.7. For the second button, "Platform Common Note", select any edge or vertex and press the button.
- 5.6.8. A note with a common platform description will be attached to the edge.



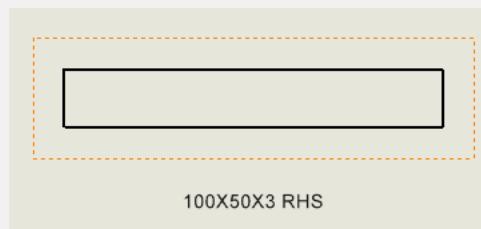
- 5.6.9. For the third button, "Edge Note", choose a text from the dropdown before proceeding.



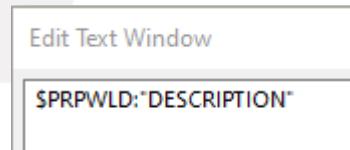
- 5.6.10. The list of text in the dropdown is populated from setting in step1.
- 5.6.11. try to select any edge or vertex (can be multiple) and press the button.
- 5.6.12. A note with ladder will be created with default position and attached to the selected entity.



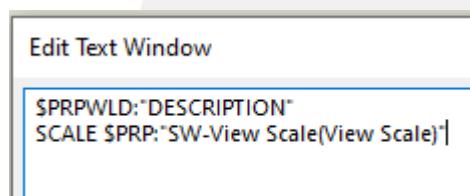
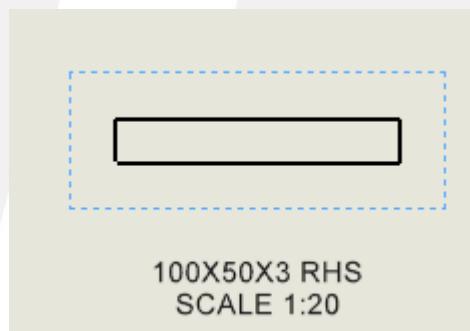
5.6.13. For the fourth button, "Description & Scale", select a view and click on the button.



5.6.14. A note with following content will be created at the middle bottom of the view:



5.6.15. If the view does not use sheet scale, another note which linked to scale will be added at the bottom of description:



5.7. Align Longest Edge

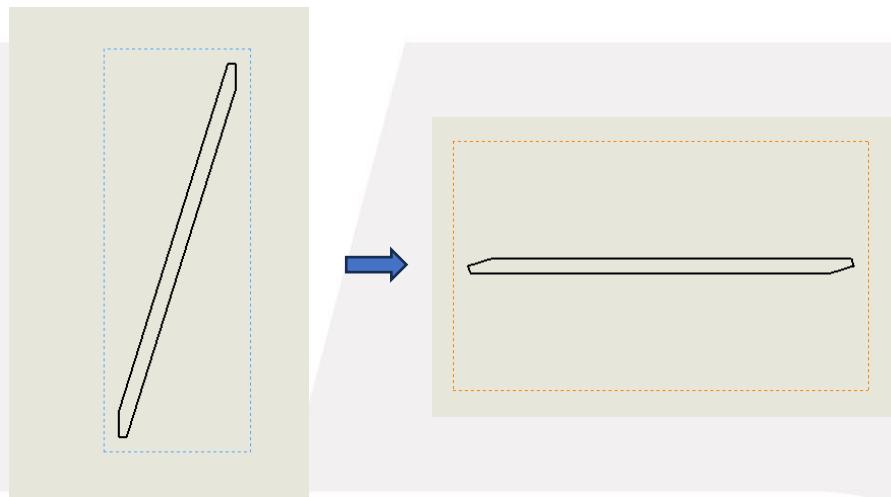


5.7.1. To align the drawing view horizontal to the longest edge. It only supports drawing files, and a view must be selected before running the Macro.

5.7.2. Select a view and click on Align Longest Edge Macro button.



5.7.3. The view will rotate according to the angle between the longest edge and horizontal.



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KALGOORLIE
(08) 9021 8300

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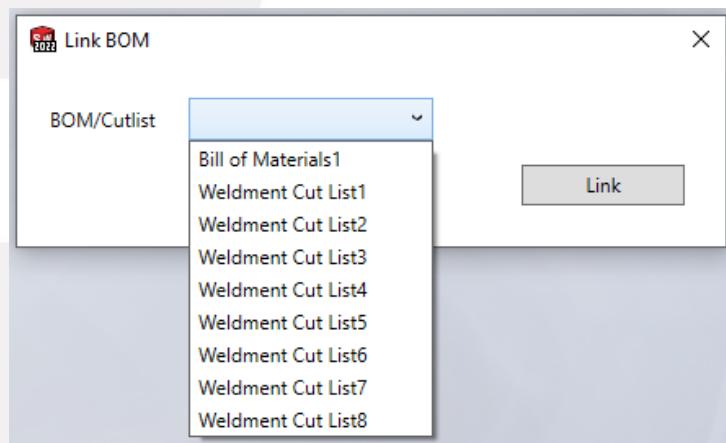
MT ISA
(07) 4743 6458



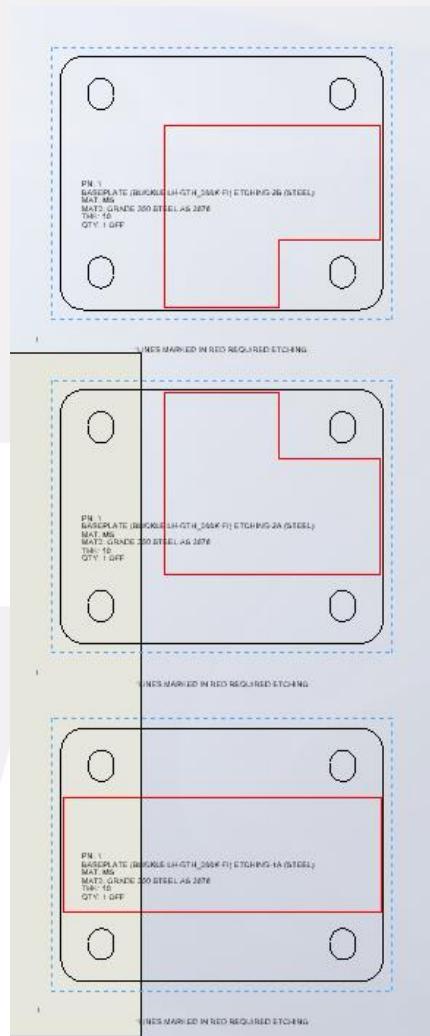
5.8. Link BOM



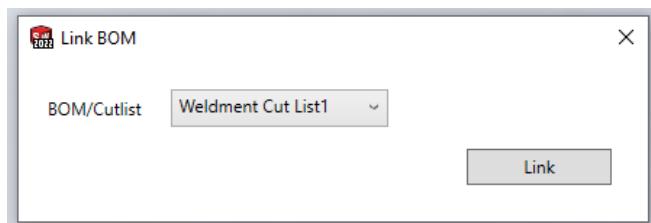
- 5.8.1. Link the balloon text of all the selected views to the BOM or Cut list selected in the interface. It only supports drawing files.
- 5.8.2. Open any drawing that you wish to link the balloon text to a specific BOM or Cut list.
- 5.8.3. Click on the Link BOM Macro button, an interface with a BOM / Cut list dropdown will appear on your screen. The dropdown lists all the BOM and Cut list in the drawing.



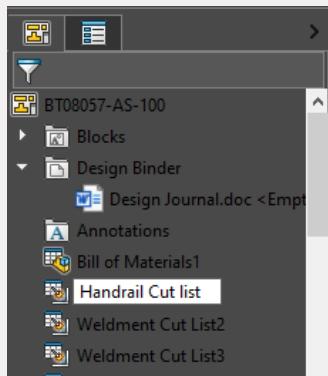
5.8.5. Select the views that you want to link the balloon text to a specific BOM or Cut list. You may use CTRL button to perform multi select.



5.8.6. Select the BOM or Cut list you want to link with all these selected views.

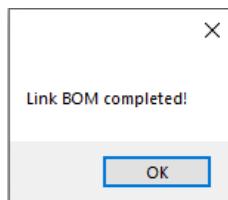


5.8.8. Tips: For ease of selection, you may rename the BOM or Cut list at feature manager design tree

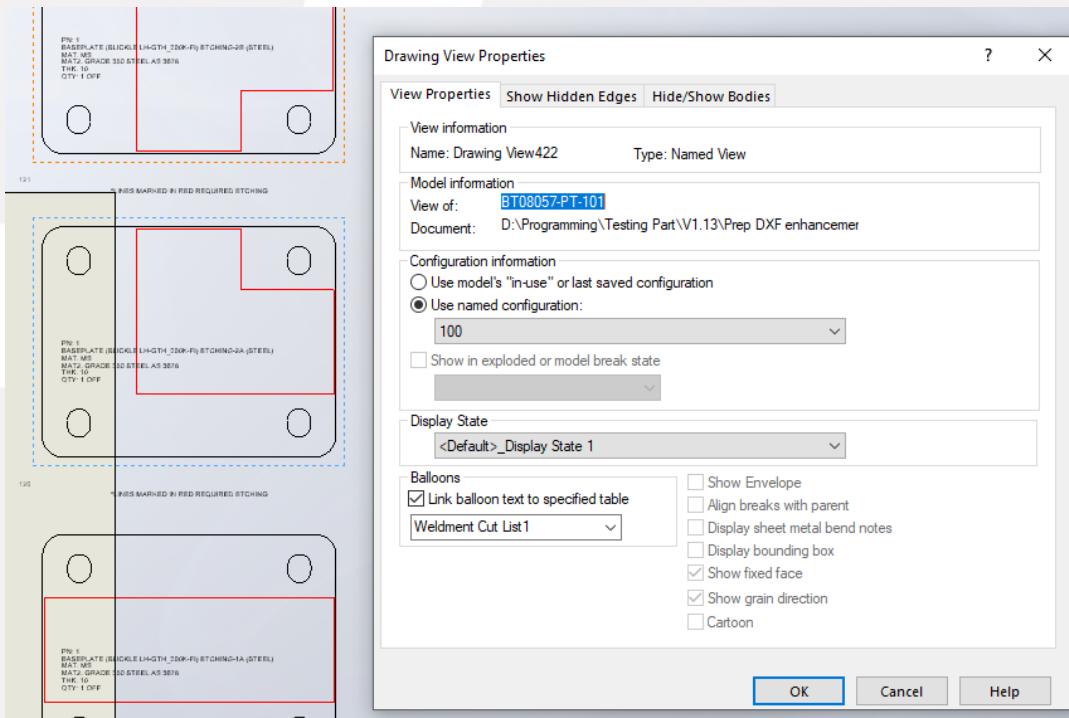


5.8.9. Click the Link button.

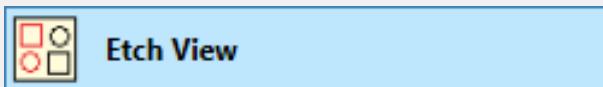
5.8.10. A message will be prompted to indicate the operation is completed. Click OK.



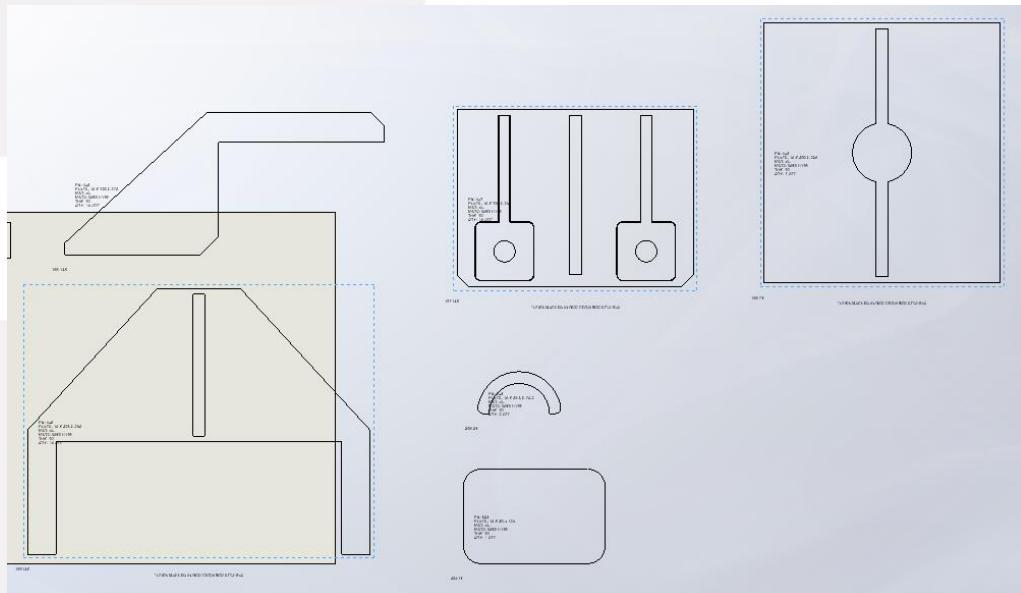
5.8.11. Check the properties of the drawing view, you can see that the balloons are now linked with the selected BOM or Cut list.



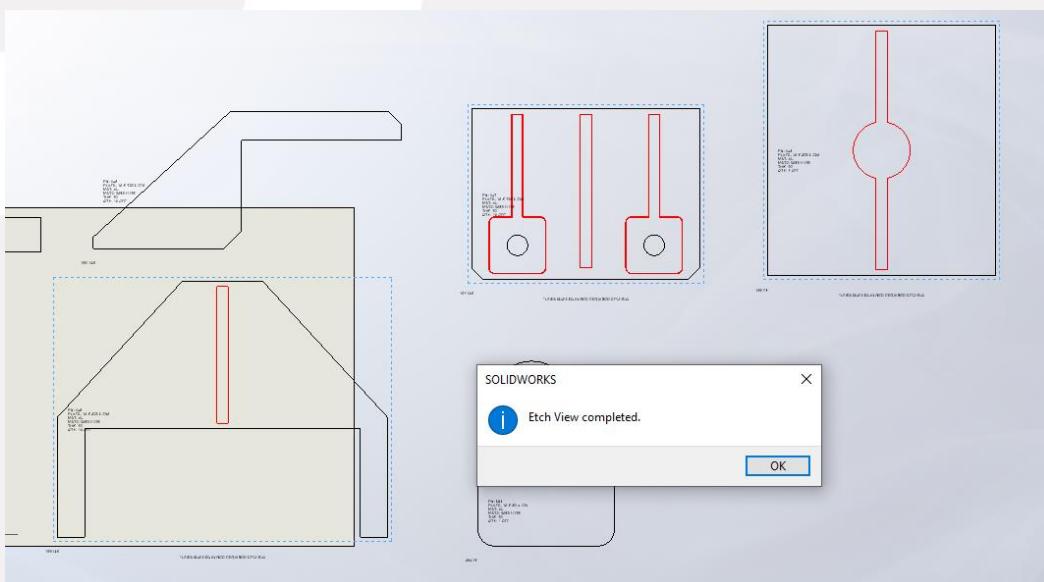
5.9. Etch View



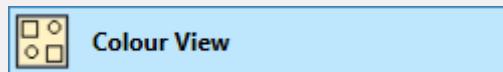
- 5.9.1. A Macro to colour any visible edge of the selected view that has “etch” in model name. You can mark the edge by using [Etch Feature Macro](#). This macro only supports Drawing document.
- 5.9.2. Open a drawing and select any view that you want to colour. Multi-select is allowed.



- 5.9.3. Click on the Etch View button, any visible edge that has “etch” in the model’s name will be coloured red.

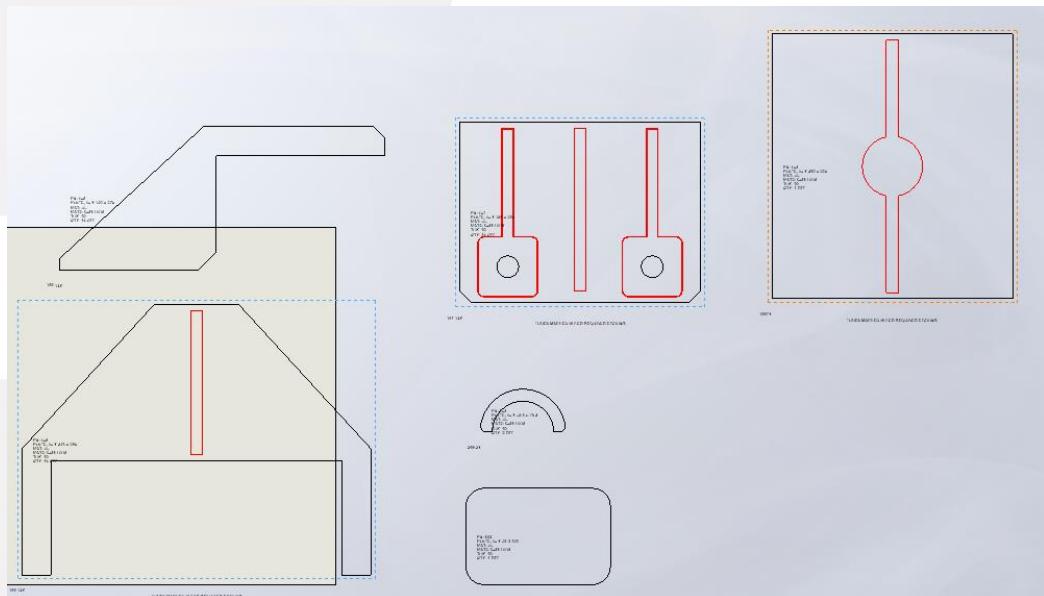


5.10. Colour View

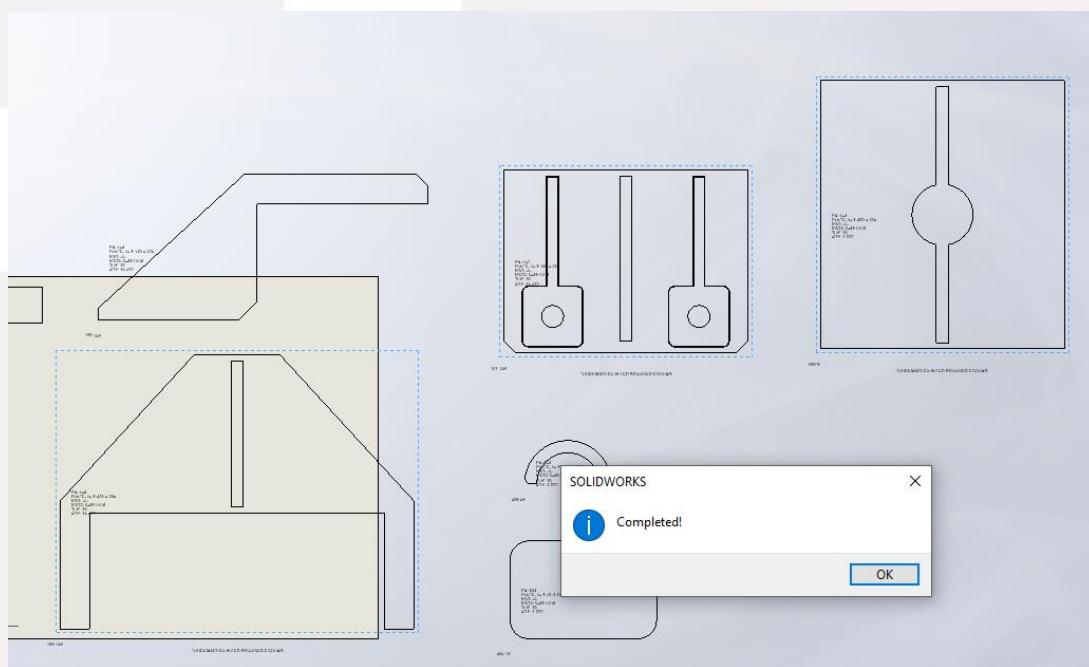


5.10.1. A Macro to colour all visible edges in the selected view to black colour. This Macro only supports Drawing document.

5.10.2. Open a drawing and select any view that you want to run the Macro. Multi-select is allowed.



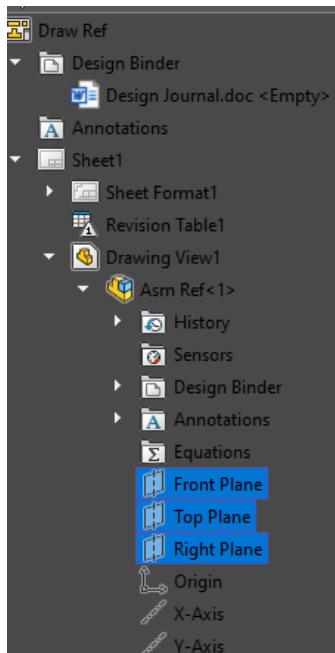
5.10.3. Click on Colour View button, all visible edges in the selected view are coloured black.



5.11. Hide Ref (Drawing)



- 5.11.1. A macro to hide any selected feature found in the active document. This section explains the Macro when running in Drawing document. For Part or Assembly document, refer to [Hide Ref \(Model\)](#).
- 5.11.2. Open any document that you want to hide specific features and click on the Hide Ref Macro button at Automation (Drawing) session.
- 5.11.3. An interface listing all the supported feature types will be shown. Refer to [Hide Ref \(Model\)](#) for supported feature type.
- 5.11.4. Use the Select All button, Deselect All button and manual check or uncheck to select any feature that you wish to hide. Then Click OK.
- 5.11.5. The Macro will traverse through all the sheets, and then views to go through all the feature tree and hide any feature with matching type and hide it.



5.12. Auto Generate DXF Sheets

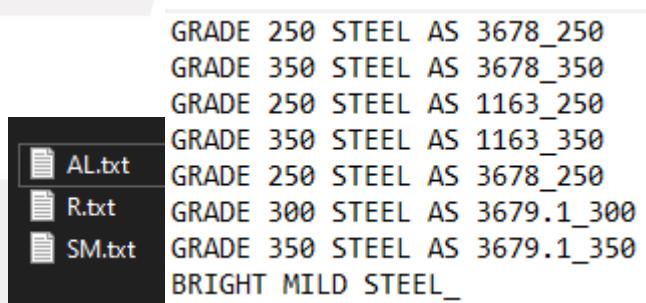


5.12.1. This macro generates all DXF sheets for all the unique bodies that contain “PLATE,” “RUBBER,” or “RUBBER SEAL,” in the name of the selected view model. This macro only supports drawing files.

5.12.2. Set configuration file location at setting.

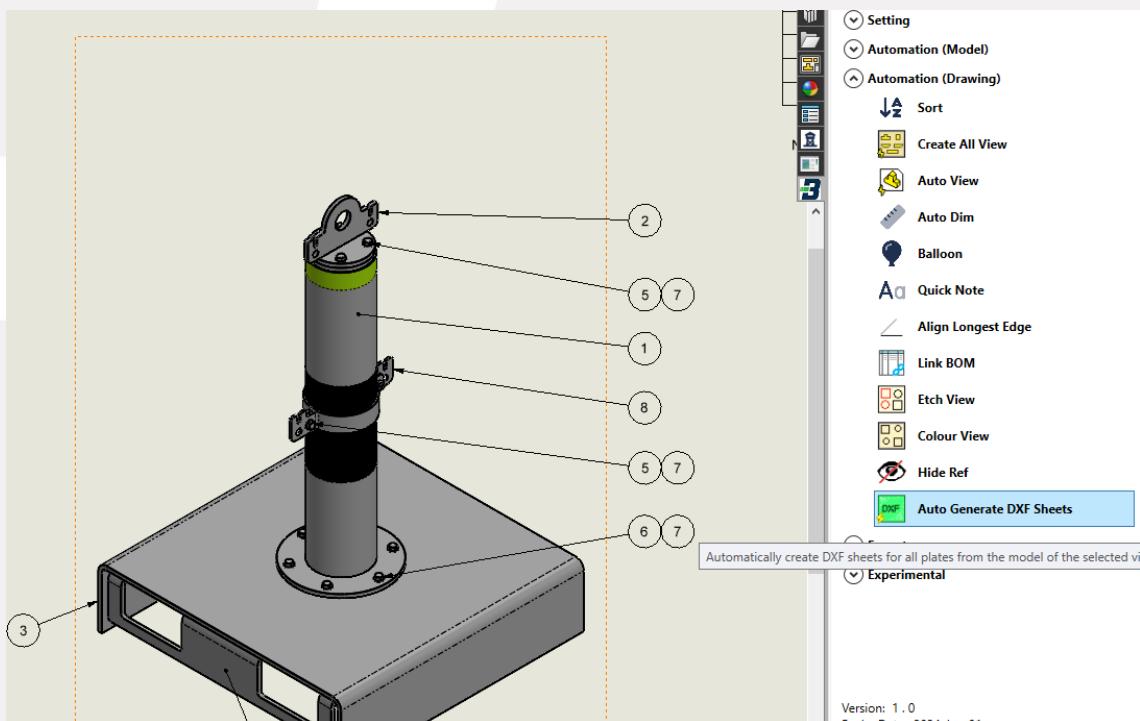


5.12.3. This setting should point to a folder path which contains the material configuration.

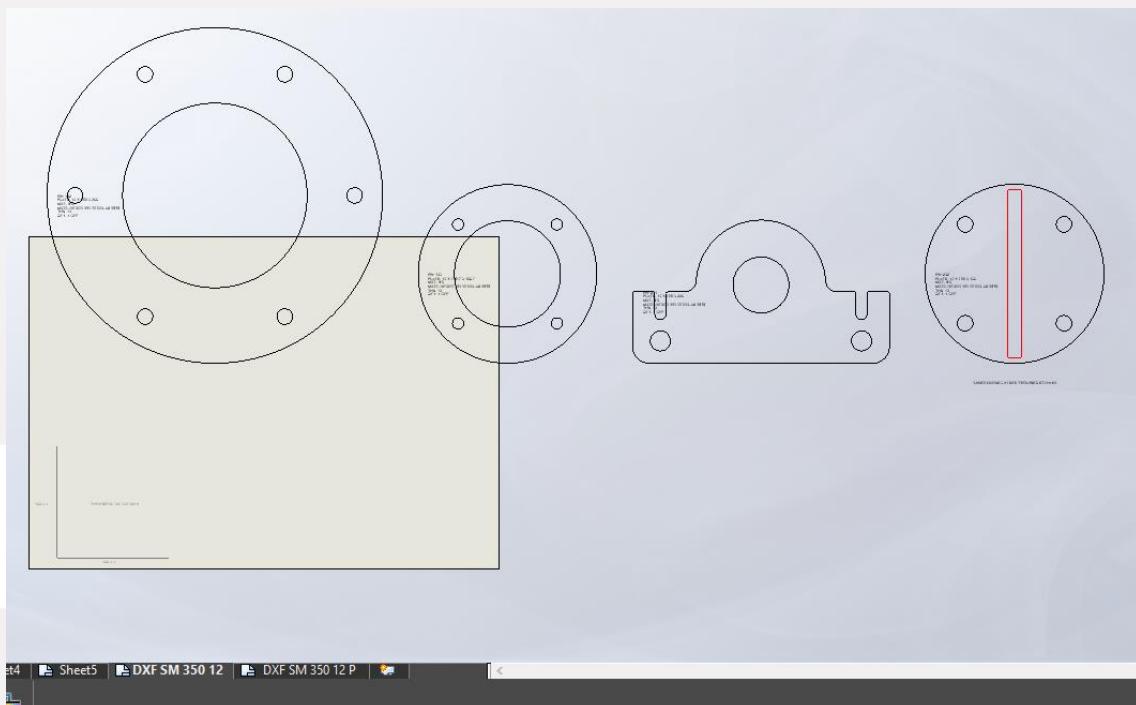


5.12.4. Open the drawing that you want to generate DXF sheets.

5.12.5. Select the view of the main assembly and click on “Auto Generate DXF Sheets” button.

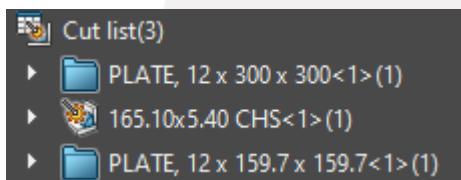


5.12.6. All bodies that meet the criteria will have a view generated at the end of the drawing.



5.13. If failed to generate the DXF or view, double check the following:

5.13.1. Make sure the body folder contains either "PLATE," "RUBBER," or "RUBBER SEAL," (case insensitive).



5.13.2. Make sure the drawing file contains all the BOM or Cut List. This macro does not supports split drawing files (etc: BT99999-AS-001_00.SLDDRW, BT99999-AS-001_01.SLDDRW).

5.13.3. Table configuration and view configuration need to be the same.

The screenshot shows a CAD software interface with a table of parts on the right and a 3D model of a bollard assembly on the left. The table has columns labeled A, B, C, D, and E. The 3D model shows a cylindrical base frame with various bolts and washers attached.

A	B	C	D	E
1	1	BOLLARD POST	PART NUMBER BT08314-PT-001_00	MATERIAL STEEL
2	1	BOLLARD - TOP PLATE	PART NUMBER BT08314-PT-002_00	MATERIAL GRADE 350 STEEL AS 3678
3	1	BASE FRAME	PART NUMBER BT08314-PT-003_00	MATERIAL GRADE 350 STEEL AS 3678
4	1	BASE FRAME WITH FORKSLOT	PART NUMBER BT08314-PT-004_00	MATERIAL GRADE 350 STEEL AS 3678
5	6	HB M12 X 35	PART NUMBER HEX BOLT M12 X 35	
6	6	HB M12 X 40	PART NUMBER HEX BOLT M12 X 40	
7	12	PW M12	PART NUMBER PLAIN WASHER M12	
8	2	BRACKET (OPTIONAL)	PART NUMBER BT08314-PT-006_00	MATERIAL STEEL

5.13.4. "As Welded" configuration needs to be deleted.

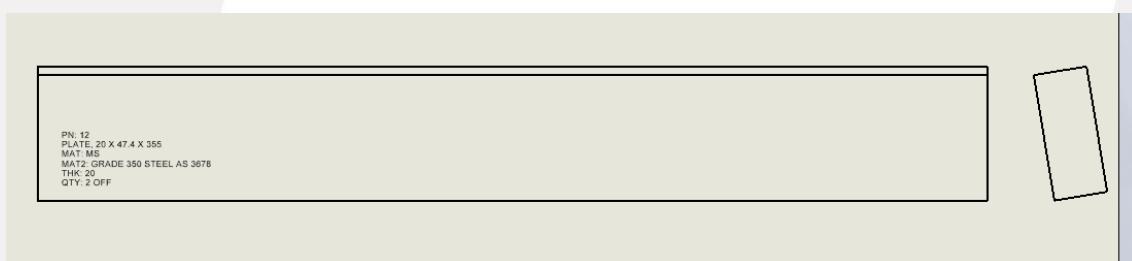
The screenshot shows a CAD software interface with a table of parts on the right. The table has columns labeled A, B, C, D, and E. The table lists three items: Tube Ø50 x 3, each with a length of 254.1, 229, and 100.8 respectively, all made of material 6060-T5.

A	B	C	D	E
1	1	Tube Ø50 x 3	LENGTH 254.1	MATERIAL 6060-T5
2	1	Tube Ø50 x 3	229	6060-T5
3	1	Tube Ø50 x 3	100.8	6060-T5

5.14. There are few known issues for the view created which might need manual adjustment from the user.

5.14.1. If there is a countersunk hole on the plate that you do not want to show it, flip the view manually.

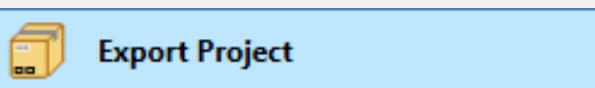
5.14.2. If there is a model that is created in an angled orientation, the view created will be in an angled orientation as well.



5.14.3. Any solid body created using Sheet Metal feature will be considered as Pressed Plate. You may need to move the view manually to different sheet.

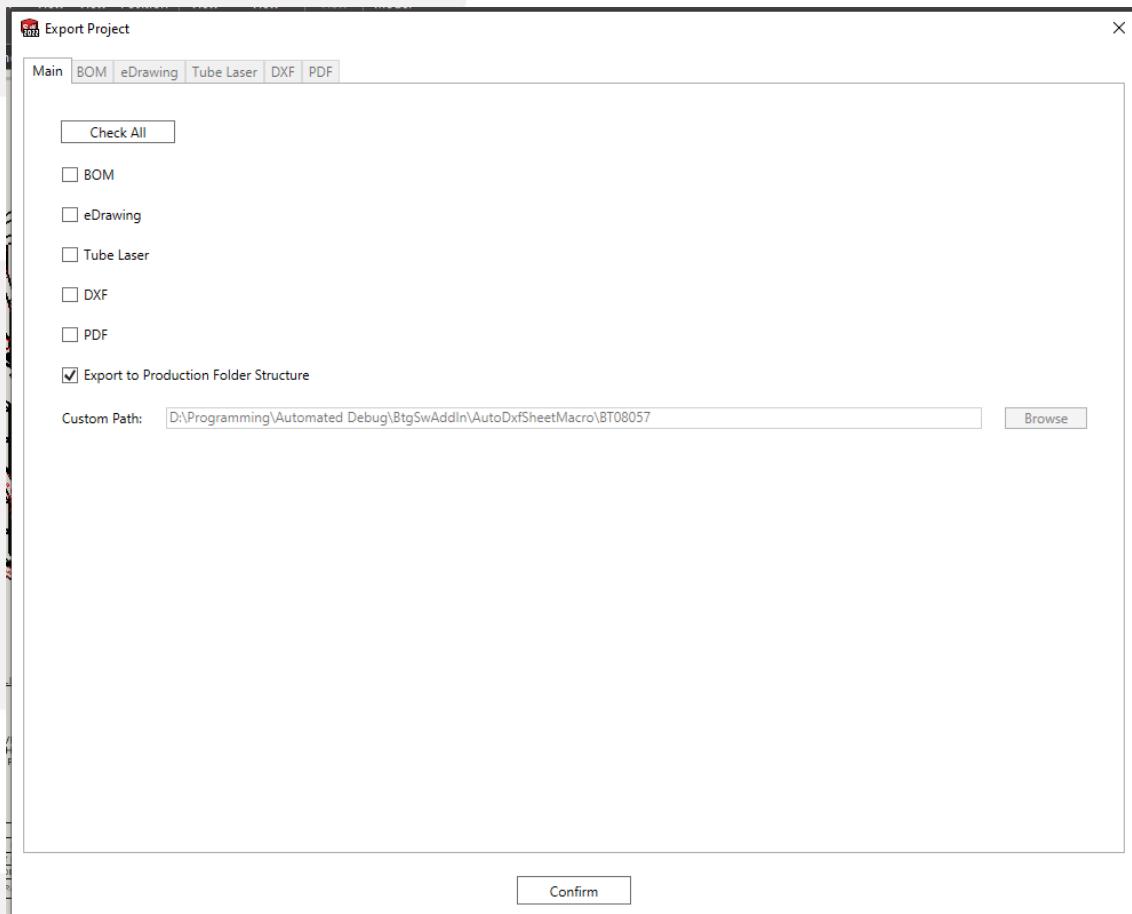
6. Export

6.1. Export Project

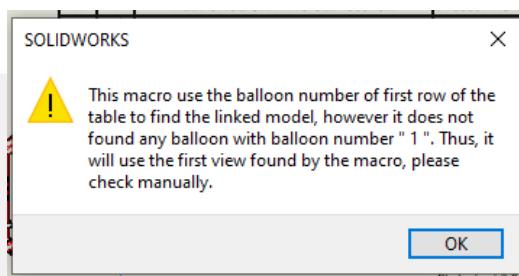


6.1.1. A Macro that exports BOM, eDrawing, Tube Laser, DXF and PDF. It only supports Drawing document.

6.1.2. Select the main assembly view in the drawing and click on the Export Project button. An interface will be prompted for the user to modify there are 6 tabs, namely Main, BOM, eDrawing, Tube Laser, DXF and PDF.



6.1.3. This macro uses the balloon number to link between the view and table. If one of your views does not have a balloon number of the first row in the same page as the table, this macro will show warning.



6.1.4. Main tab:



- 6.1.4.1. Check All button: Click this to check all the BOM, eDrawing, Tube Laser, DXF and PDF checkboxes.
- 6.1.4.2. BOM checkbox: Check this to export BOM.
- 6.1.4.3. eDrawing checkbox: Check this to export model as eDrawing.
- 6.1.4.4. Tube Laser checkbox: Check this to export model as Tube Laser STEP file.
- 6.1.4.5. DXF checkbox: Check this to export DXF.
- 6.1.4.6. PDF checkbox: Check this to export PDF.
- 6.1.4.7. Export to Production Folder Structure checkbox: Check on this if you want the exported file following folder structure. Refer to Export DXF, [Export BOM](#), [Export PDF](#) or Export Model macro for the detail. This option is checked by default.
- 6.1.4.8. Custom Path textbox: Uncheck Export to Production Folder Structure to activate this field. This field represents a custom path if do not want to export to production folder structure. By default, it will point to the same folder as the active drawing file.
- 6.1.4.9. Browse button: A button to browse to a folder path for custom path textbox.

6.1.6. BOM tab:

Main	BOM	eDrawing	Tube Laser	DXF	PDF
Table Name	First Balloon No.	Rename Body?	Tube Laser Configuration		
Bill of Materials1	1	<input type="checkbox"/>	in use	▼	
Weldment Cut List1	101	<input checked="" type="checkbox"/>	tube laser	▼	
Weldment Cut List2	201	<input checked="" type="checkbox"/>	tube laser	▼	
Weldment Cut List3	301	<input checked="" type="checkbox"/>	tube laser	▼	
Weldment Cut List7	4	<input checked="" type="checkbox"/>	Default	▼	
Weldment Cut List4	401	<input checked="" type="checkbox"/>	Default	▼	
Weldment Cut List5	501	<input checked="" type="checkbox"/>	Default	▼	
Weldment Cut List6	601	<input checked="" type="checkbox"/>	TUBE LASER	▼	
Weldment Cut List8	10	<input checked="" type="checkbox"/>	100	▼	

6.1.6.1. Table Name column: Column listing all the BOM or Weldment cut list.

6.1.6.2. First Balloon No. column: Column showing the first balloon number in that table.

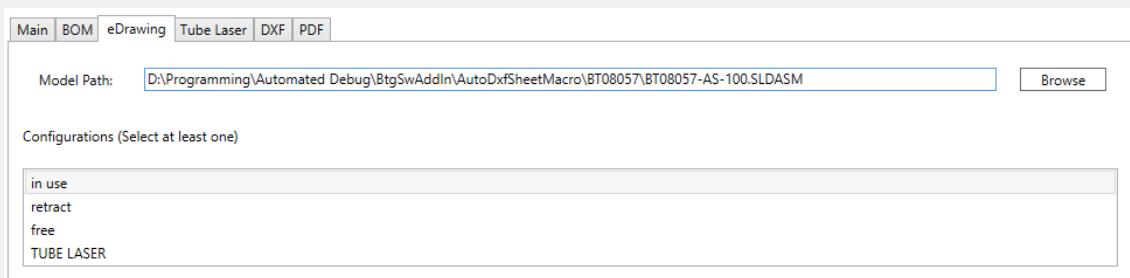
6.1.6.3. Rename Body? column: Checkbox column for you to choose whether you want to rename the body of the reference model of that cut list. This only support for weldment cut list, all checkboxes on BOM will be unchecked by default. The body will be renamed following the format:

ModelName_BalloonNo_Instance



6.1.6.4. Tube Laser Configuration column: Dropdown column for you to choose which configuration you want to run the body rename macro.

6.1.8. eDrawing Tab:

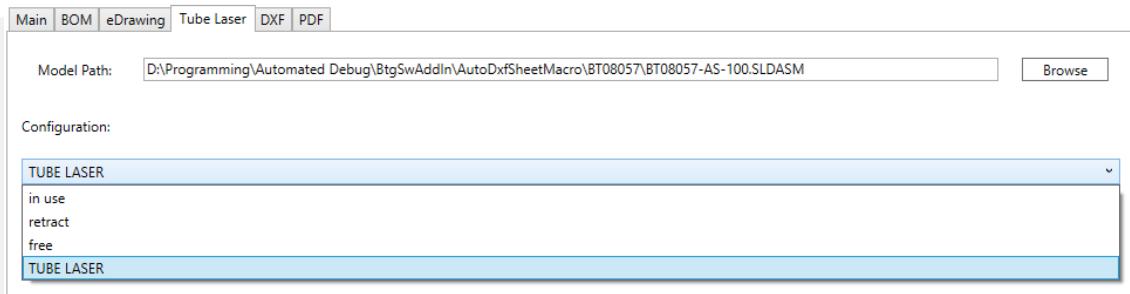


6.1.8.1. Model Path textbox: The path of the model to export as eDrawing for this project. It will show the path to the selected view model by default.

6.1.8.2. Browse button: A button to browse to the model to export, only supports Part or Assembly file.

6.1.8.3. Configuration listbox: A listbox to select which configuration to export. Must select at least one configuration.

6.1.9. Tube Laser Tab:



6.1.9.1. Model Path textbox: The path of the model to export as Tube Laser STEP file for this project. It will show the path to the selected view model by default.

6.1.9.2. Browse button: A button to browse to the model to export, only supports Part or Assembly file.

6.1.9.3. Configuration dropdown: Choose the configuration to export. It will select the first configuration which contains "LASER" in the name (case insensitive).

6.1.10. DXF Tab:

Main	BOM	eDrawing	Tube Laser	DXF	PDF
Sheet Name	Include				
DXF SM 350 5 P	<input checked="" type="checkbox"/>				
DXF SM 350 5	<input checked="" type="checkbox"/>				
DXF SM 350 10 P	<input checked="" type="checkbox"/>				
DXF SM 350 10	<input checked="" type="checkbox"/>				
DXF SM 350 3	<input checked="" type="checkbox"/>				
DXF SM 350 3 P	<input checked="" type="checkbox"/>				
DXF SM 350 20	<input checked="" type="checkbox"/>				

6.1.10.1. Sheet Name column: Column listing all sheets with DXF in the name.

6.1.10.2. Include column: Column for you to choose which DXF you want to export.

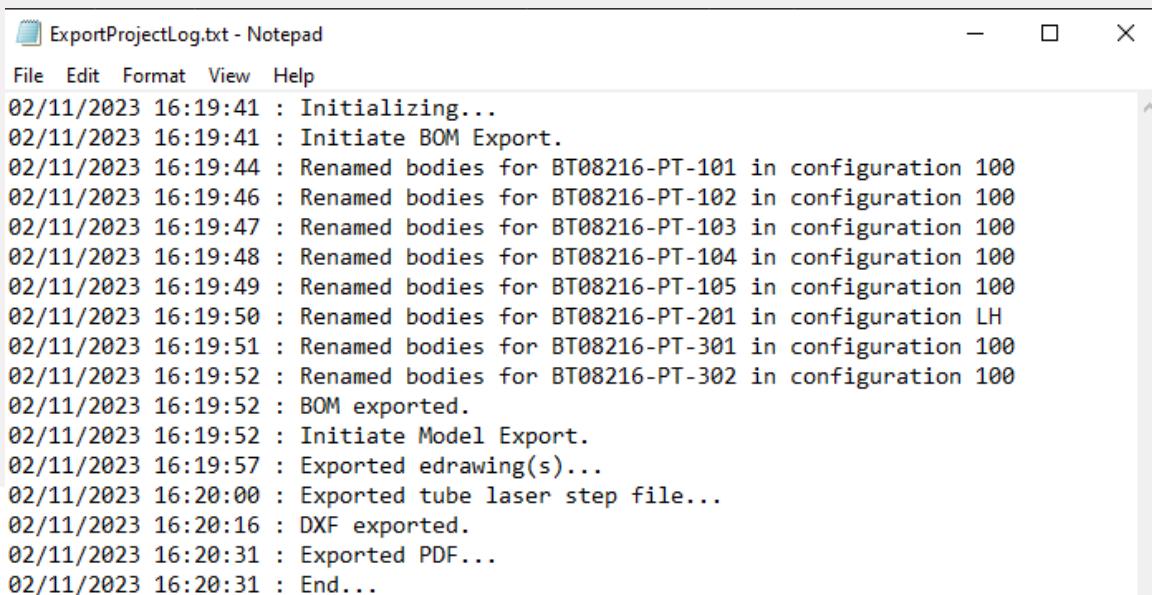
6.1.11. PDF Tab:

Main	BOM	eDrawing	Tube Laser	DXF	PDF
Sheet Name	Include				
Sheet1	<input checked="" type="checkbox"/>				
Sheet2	<input checked="" type="checkbox"/>				
Sheet3	<input checked="" type="checkbox"/>				
Sheet4	<input checked="" type="checkbox"/>				
Sheet5	<input checked="" type="checkbox"/>				
Sheet6	<input checked="" type="checkbox"/>				
Sheet7	<input checked="" type="checkbox"/>				
Sheet8	<input checked="" type="checkbox"/>				
Sheet9	<input checked="" type="checkbox"/>				
Sheet10	<input checked="" type="checkbox"/>				
Sheet11	<input checked="" type="checkbox"/>				
Sheet12	<input checked="" type="checkbox"/>				
Sheet13	<input checked="" type="checkbox"/>				
Sheet14	<input checked="" type="checkbox"/>				
Sheet15	<input checked="" type="checkbox"/>				
Sheet16	<input checked="" type="checkbox"/>				
Sheet17	<input checked="" type="checkbox"/>				
Sheet18	<input checked="" type="checkbox"/>				
DXF SM 350 5 P	<input type="checkbox"/>				
DXF SM 350 5	<input type="checkbox"/>				
DXF SM 350 10 P	<input type="checkbox"/>				
DXF SM 350 10	<input type="checkbox"/>				
DXF SM 350 3	<input type="checkbox"/>				
DXF SM 350 3 P	<input type="checkbox"/>				
DXF SM 350 20	<input type="checkbox"/>				

6.1.11.1. Sheet Name column: Column listing all sheets in the drawing.

6.1.11.2. Include column: Checkbox column for you to include or exclude the sheet for PDF export. Any sheet that has "DXF" in the sheet name is unchecked by default.

6.1.12. Make sure all settings are set accordingly, then press the Confirm button.



The screenshot shows a Windows Notepad window with the title "ExportProjectLog.txt - Notepad". The window contains a log of operations performed on 02/11/2023 at 16:19:41. The log includes:

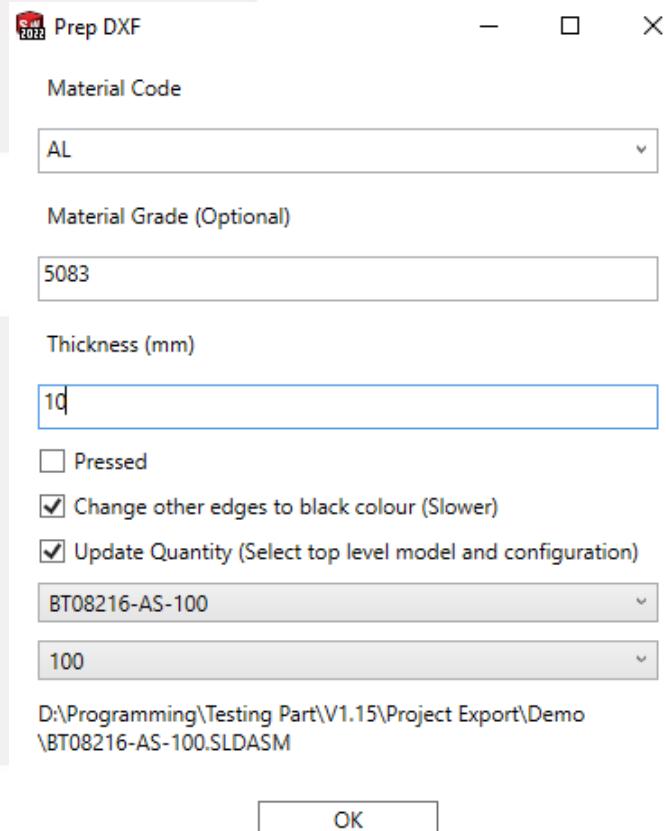
- Initializing...
- Initiate BOM Export.
- Renamed bodies for BT08216-PT-101 in configuration 100
- Renamed bodies for BT08216-PT-102 in configuration 100
- Renamed bodies for BT08216-PT-103 in configuration 100
- Renamed bodies for BT08216-PT-104 in configuration 100
- Renamed bodies for BT08216-PT-105 in configuration 100
- Renamed bodies for BT08216-PT-201 in configuration LH
- Renamed bodies for BT08216-PT-301 in configuration 100
- Renamed bodies for BT08216-PT-302 in configuration 100
- BOM exported.
- Initiate Model Export.
- Exported edrawing(s)...
- Exported tube laser step file...
- DXF exported.
- Exported PDF...
- End...

6.1.13. A log file will be generated at {AppData}\BTG\BTG SolidWorks AddIn\Log location.

6.2. Prep DXF Export



- 6.2.1. A Macro to prepare the drawing sheet for production. It only supports drawing files.
- 6.2.2. Make the sheet for production active and press the Prep DXF Export button.
- 6.2.3. Another window will be prompted to enter plate thickness and select material code. You can type in customized material code as well.



- 6.2.4. Check on Update Quantity to calculate the total quantity of the body in the model selected in the dropdown below of the checkbox. It uses SolidWorks API GetCoincidenceTransform to check if any of the other bodies in the assembly returns a transformation matrix. There is another dropdown to select the reference configuration as well, make sure to select the right one.

6.2.6. After clicking ok, the sheet format will be removed, scale will change to 1:1. All visible edges in all drawing view will be coloured **BLACK** if the checkbox Change other edges to black colour is checked. If your model does not prepare with the Etch Feature macro, any visible edges with 0.1mm or 0.5mm edge associated with it will be coloured RED. Additionally, few notes will be added to the view accordingly:

- 6.2.7. An etch note will be added at the bottom of the view if it is coloured.
- 6.2.8. Description notes.
- 6.2.9. A balloon without border and leader for cross-checking function in Export DXF Macro.

6.2.10. The format for the description notes is as follow:

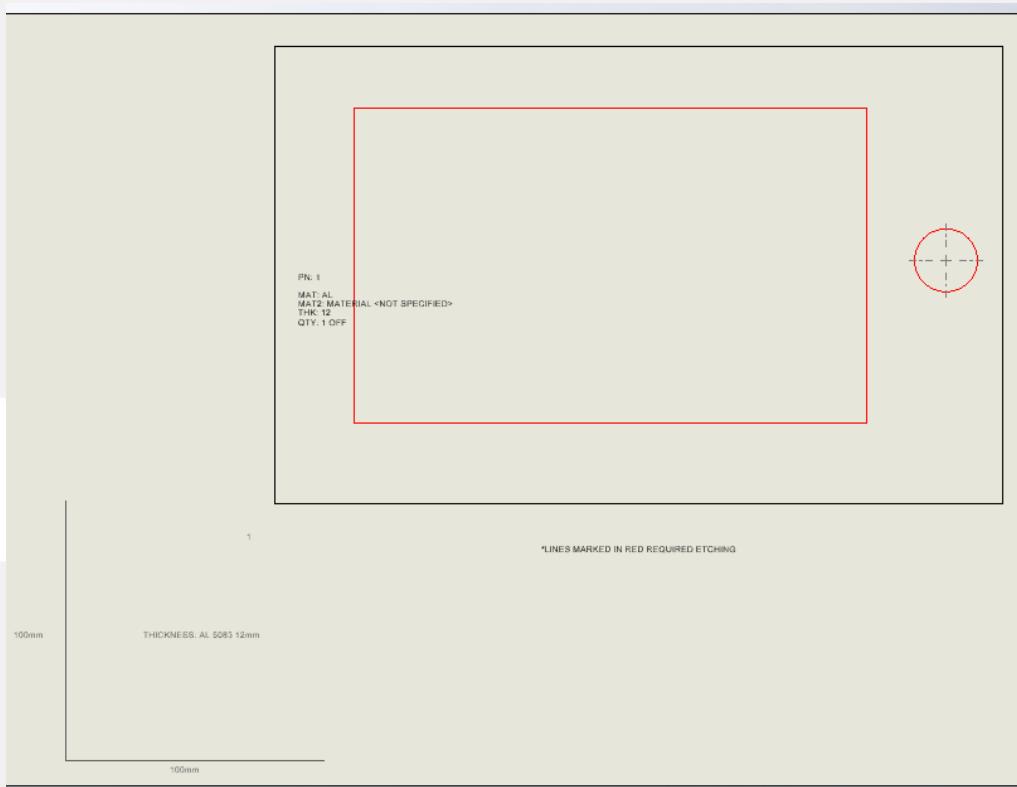
- 6.2.10.1. Row 1: PN: <Balloon Number>
- 6.2.10.2. Row 2: Cut List Property Description
- 6.2.10.3. Row 3: MAT <Material Alias>
- 6.2.10.4. Material Alias is based on table below:

Material Code	Material Alias
AL	AL
ALC	AL
SM	MS
SMC	MS
SS	STS
R	OTHER
Custom	OTHER

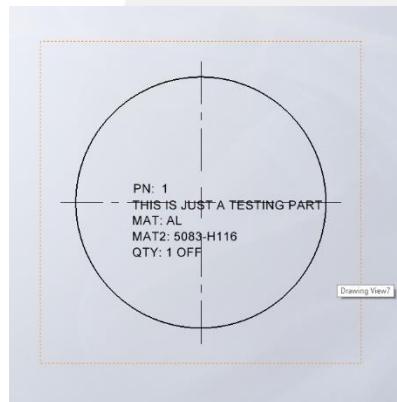
- 6.2.10.5. Row 4: MAT2: <Cut List Property Material>
- 6.2.10.6. Row 5: THK: <Thickness Input>
- 6.2.10.7. Row 6: QTY: <Balloon Quantity> OFF

PN: 1
SHEET
MAT: AL
MAT2: 5083-H116
THK: 10
QTY: 1 OFF

6.2.12. If your model is prepared using the Etch Feature Macro, any edge that contains "etch" in the model entity name will be coloured red. Below is the result from the Macro.



6.2.13. Any note that is larger than the view outline will be scaled down.



6.2.14. If the part number is different from your cut list or BOM, override the balloon instead of the text generated by this Macro.

6.2.15. If your balloon is showing asterisk (*) mark, you should override the quantity manually on the text generated.

6.3. Export DXF



- 6.3.1. A Macro to save every sheet that contains "dxf" in the sheet name (NOT case sensitive) in Production\Flat Plates or Pressed Plates folder accordingly. It only supports drawing files. If you are working directly in PDM, make sure the output folder already exists. The name of the exported file will be in the format of FileName_Revision_SheetName.
- 6.3.2. Open the drawing you which to save all the sheet with "dxf" in the sheet name and press the Save DXF button.
- 6.3.3. An interface will be prompted with a list of supported sheets. The following are the Macro for each control in the interface:
- 6.3.3.1. Include column: Uncheck to exclude that sheet from exporting.
 - 6.3.3.2. Production check box: Uncheck to export the file to same folder as the drawing file, else it will save at ...\\Production folder.



- 6.3.4. The Macro will run through all the sheets and save as DXF accordingly. A cross-check function will run at the back end to replace part number in the note added with [Prep DXF Export](#) Macro if it is different from balloon part number.
- 6.3.5. If you encounter the warning of 0 quantity and you are positive that you have the correct configuration set in the assembly and view, try to open your assembly and make sure the configurations are correct and save the assembly. This is due to the Macro will use the last saved configuration of the assembly, your last saved configuration might not be the one you used for your drawing view.

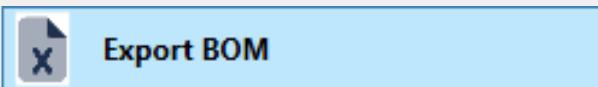
6.3.6. All the generated DXF without ending with "p" in the sheet name will be saved in the Production\Flat Plates directory.

Organize					New	Open	Select
					D:	Project > R86415 - WORK BENCH - LARGE HEAVY DUTY > Production > Flat Plates	
	Name		Date modified	Type	Size		
▶	BT02331-AS-100_00_dxf sm 350 10.dxf		09/06/2023 16:50	DXF File	29 KB		
▶	BT02331-AS-100_00_dxf sm 350 12.dxf		09/06/2023 16:50	DXF File	32 KB		

6.3.7. If the sheet name file has "p" at the end, which indicates that it is pressed or flattened, the DXF will be saved at Production\Pressed Plates - external fab. Additionally, a step file will be created at Production\Pressed Plates - inhouse fab.



6.4. Export BOM



- 6.4.1. A Macro to save every BOM (excluding revision table) to an excel file in Production folder. It only supports drawing files. If you are working directly in PDM, make sure the output folder already exists.
- 6.4.2. Open the drawing you which to save all the BOM to excel and press the Export BOM button.
- 6.4.3. Confirmation message will be prompted, you can choose to export the file to current folder of the working drawing by unchecking the "Export to Production Folder" option. Click OK to proceed.



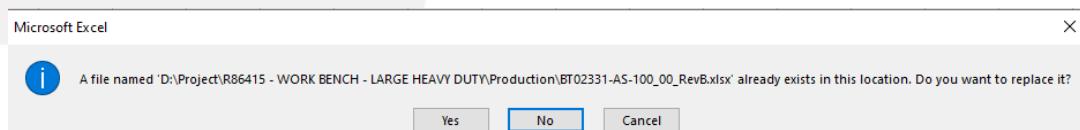
- 6.4.4. The Macro will run through all tables and save in Excel accordingly.

A	B	C	D	E
NO.	QTY.	DESCRIPTION	LENGTH	MATERIAL
1	1	100x50x3 RHS	650	6060-T5
2	1	100x50x3 RHS	2601.1	6060-T5
3	1	100x50x3 RHS	2814.4	6060-T5
4	3	100x50x3 RHS	2826.3	6060-T5
5	1	100x50x3 RHS	2945.4	6060-T5
6	1	150x50x3 RHS	503.9	6060-T5
7	1	150x50x3 RHS	733	6060-T5
8	2	150x50x3 RHS	850	6060-T5
9	1	150x50x3 RHS	850	6060-T5
10	1	150x50x3 RHS	850	6060-T5
11	3	150x50x3 RHS	850	6060-T5
12	2	150x50x3 RHS	900	6060-T5
13	1	150x50x3 RHS	1100	6060-T5
14	2	150x50x3 RHS	1350	6060-T5
15	2	150x50x3 RHS	1350	6060-T5
16	1	150x50x3 RHS	1450	6060-T5
17	1	150x50x3 RHS	1450	6060-T5
18	2	150x50x3 RHS	2080.9	6060-T5
19	1	150x50x3 RHS	2116.7	6060-T5
20	1	150x50x3 RHS	2350	6060-T5
21	1	150x50x3 RHS	2350	6060-T5
22	4	150x50x3 RHS	2483	6060-T5

6.4.6. An Excel will be opened and saved in the Production directory. The name will include revision as well.

Project > R86415 - WORK BENCH - LARGE HEAVY DUTY > Production >	
Name	Date modified
Flat Plates	09/06/2023 16:50
BT02331-AS-100_00_RevA.PDF	03/09/2018 11:41
BT02331-AS-100_00_RevB.xlsx	12/06/2023 11:11

6.4.7. If you have another BOM with the same name exists in the folder, it will prompt you to either to replace it or not.

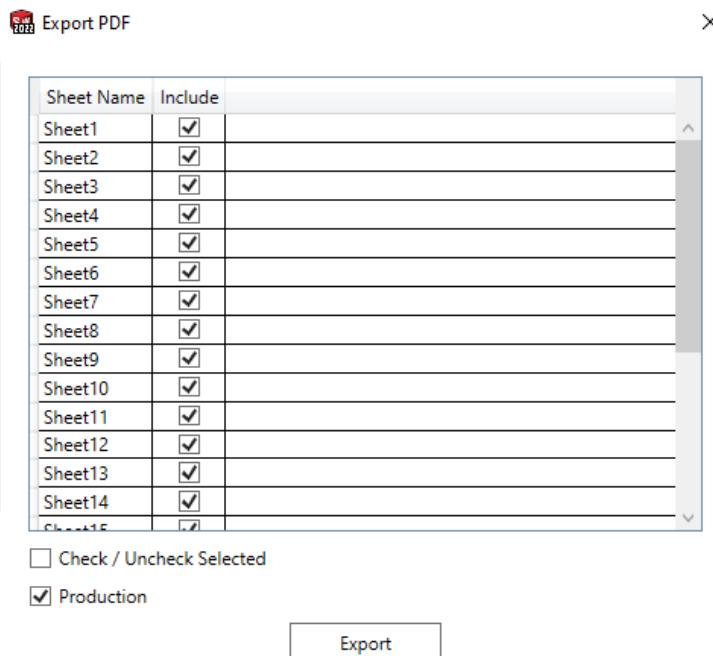


6.4.8. If you choose No, some error message will be prompted to indicate that the saving is failed.

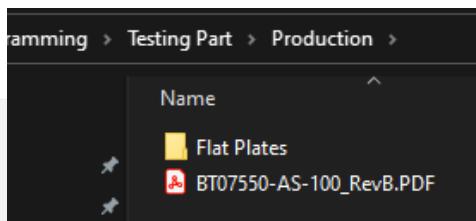
6.5. Export PDF



- 6.5.1. A Macro to export drawing files as PDF to Production folder while excluding those prepared for DXF export. It only supports drawing files. If you are working directly in PDM, make sure the output folder already exists.
- 6.5.2. Open the drawing you wish to export as PDF and press the Export PDF button.
- 6.5.3. An interface will be prompted for the user to choose which sheet they want to export PDF. Uncheck the Include checkbox will exclude that sheet from export. You may select multiple rows and use the “Check / Uncheck Selected” checkbox to check or uncheck multiple sheets. By default, all sheets with name contains “DXF” are excluded. You can choose to export the file to the current folder of the working drawing by unchecking the "Export to Production Folder" option. Click Export to proceed.



- 6.5.4. The Macro save all the selected drawing sheets as a PDF file in the production directory (..\production\). The exported file name will include revision as well.



6.6. Export Model



6.6.1. A Macro to export SolidWorks part or assembly file as assembly and step file.

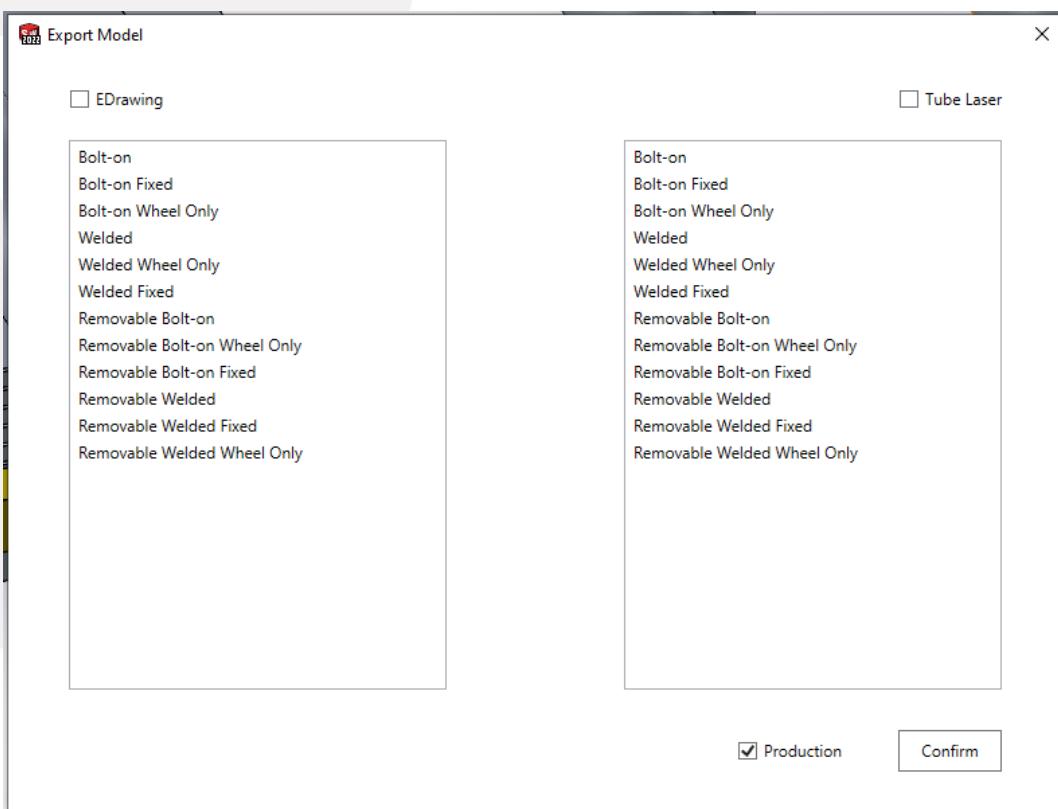
If you are working directly in PDM, make sure the output folder already exists.

This Macro will fail if your model does not follow the format of BTXXXXX-XX-XXX.

6.6.2. Video: <https://youtu.be/-7qVabluQ9U>

6.6.3. Open the assembly or part file that you want to export as Edrawing or step file. Then press the Export Model button.

6.6.4. An interface will be displayed as shown the picture below:

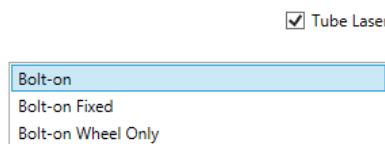


6.6.5. If you wish to export as an Edrawing file, check on the Edrawing check box.

Then, select whichever configuration that you want to include in this Edrawing file. Multiple selection is possible.



6.6.6. If you wish to export as STEP file for tube laser, check on the Tube Laser check box. Then, select the configuration that you want to use as tube laser model. Only single selection is permitted.



6.6.7. You can choose to export the file to the current folder of the working drawing by unchecking the "Production" option. If the "Production" check box is checked, Edrawing will be saved in the ..\Production folder and STEP file will be saved in the ..\Production\Tube Laser folder.

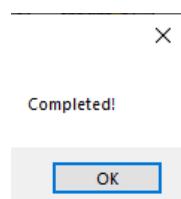


6.6.8. The exported file name will be in the format of:

- 6.6.8.1. Edrawing – BTXXXXX-AS-100_RevA.easm / BTXXXXX-PT-100_RevA.eprt
- 6.6.8.2. STEP – BTXXXXX-AS100A.STEP / BTXXXXX-PT100A.STEP
- 6.6.8.3. The revision is based on the custom properties, "Revision" of that file.

Properties			
	Property Name	Type	Value / Text
1	Weight	Text	'SW-Mass@BTXXXXX-AS-100.SLDASM'
2	Revision	Text	A
3	<Type a new property>		

6.6.9. Once everything is set, press the Confirm button. A message will be displayed once the export process is completed.

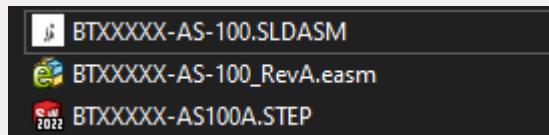


6.6.10. If "Production" check box is checked, the files will be exported to production folder structure.

MasterPlatform > Production >	MasterPlatform > Production > Tube Laser
Name	Name
Tube Laser	BTXXXXX-AS100A.STEP



6.6.11. If the “Production” check box is unchecked, the files will be exported to the same folder as the model.



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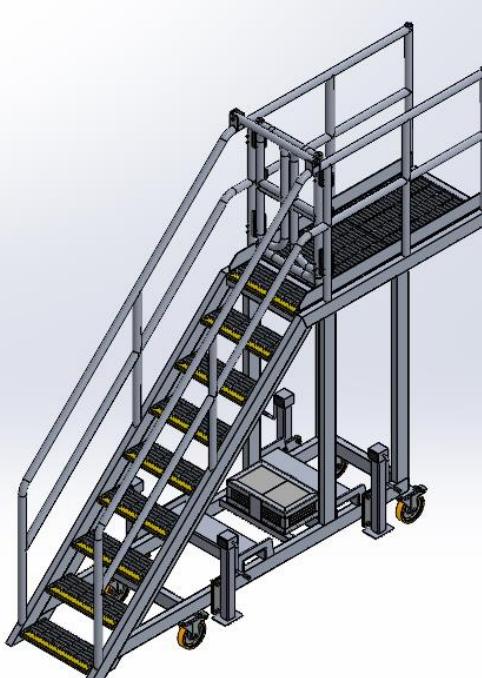
7. Experimental

7.1. Platform Automation



Platform Automation

7.1.1. An experimental Macro to automatically generate Platform CAD models and drawings. This Macro generates models according to user input by using the premade model specifically for this Macro. Now only support standard platform as shown in picture below:



7.1.2. Close all open documents before running this Macro.

7.1.3. Click on Platform Automation button.



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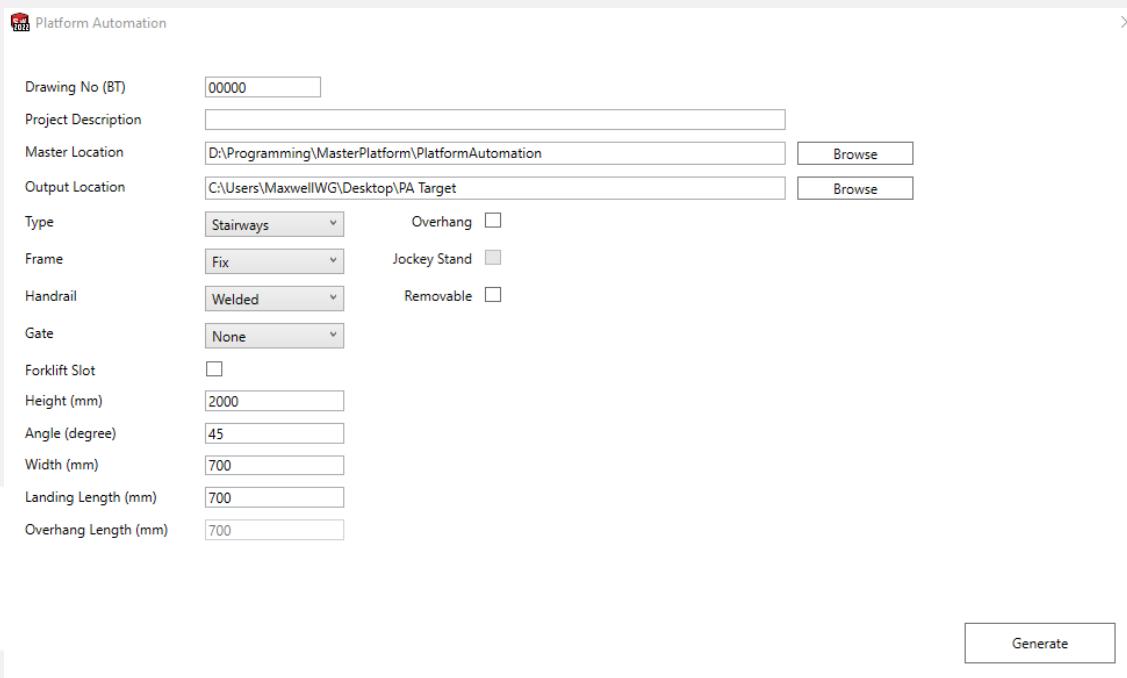
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(08) 9175 1164

MT ISA
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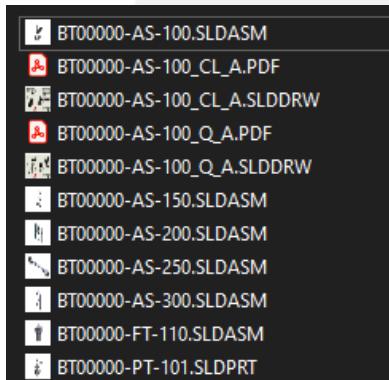
7.1.5. Interface will be shown for user to input the parameters of the platform.



7.1.6. Drawing No (BT): All generated models and drawings will be using this input as drawing number.

7.1.6.1. Sample Input: 00000

7.1.6.2. Sample assembly file name generated: BT00000-AS-100.SLDASM



7.1.7. Drawing number must fulfilled the following criteria:

7.1.7.1. Character length must be exactly 5.

7.1.7.2. Can contain character from 0 to 9 only.

7.1.9. Project Description: The description field in the main assembly custom property. This input cannot be empty.

Properties			
	Summary	Custom	Configuration Properties
Delete			
Property Name	Type	Value /	
1 Weight	Text	"SW-Mass@BT00000-AS-100.SLDASM"	
2 Description	Text	test	
3 <Type a new property>			

7.1.10. Master Location: Folder path to the specific models built for this Macro. If you have saved the models in a different location, make sure to set it first to avoid any unexpected error.

7.1.11. Output Location: Folder path to store all the generated models and drawings.

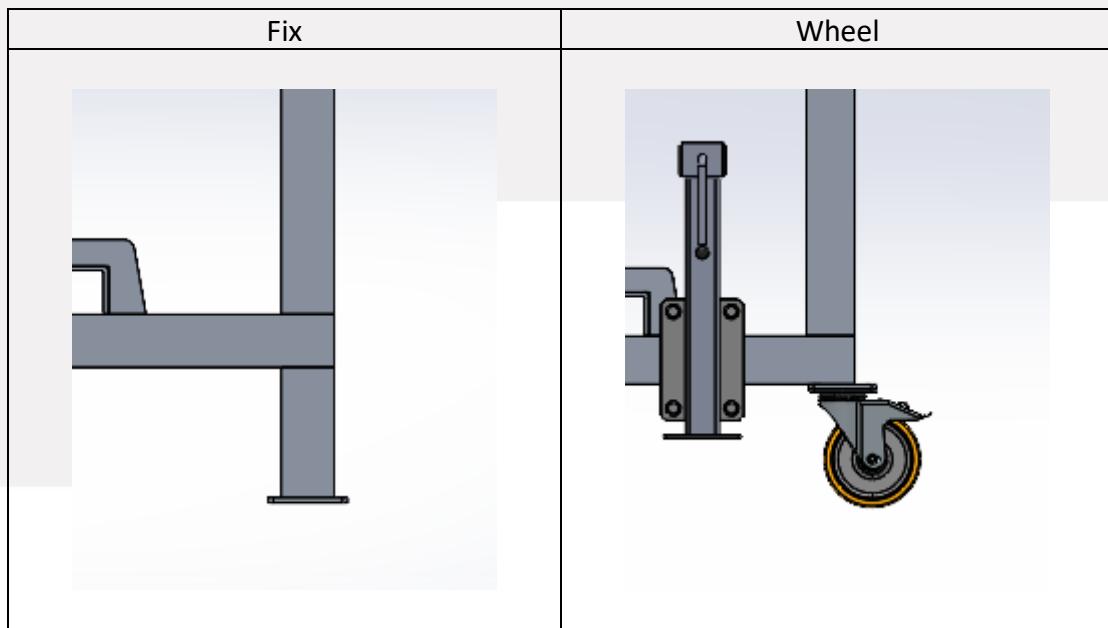
7.1.13. Type: There are 2 types of platforms, Stairways and Step-type.

Stairways (20~45 degrees)	Step-type (60~70 degrees)

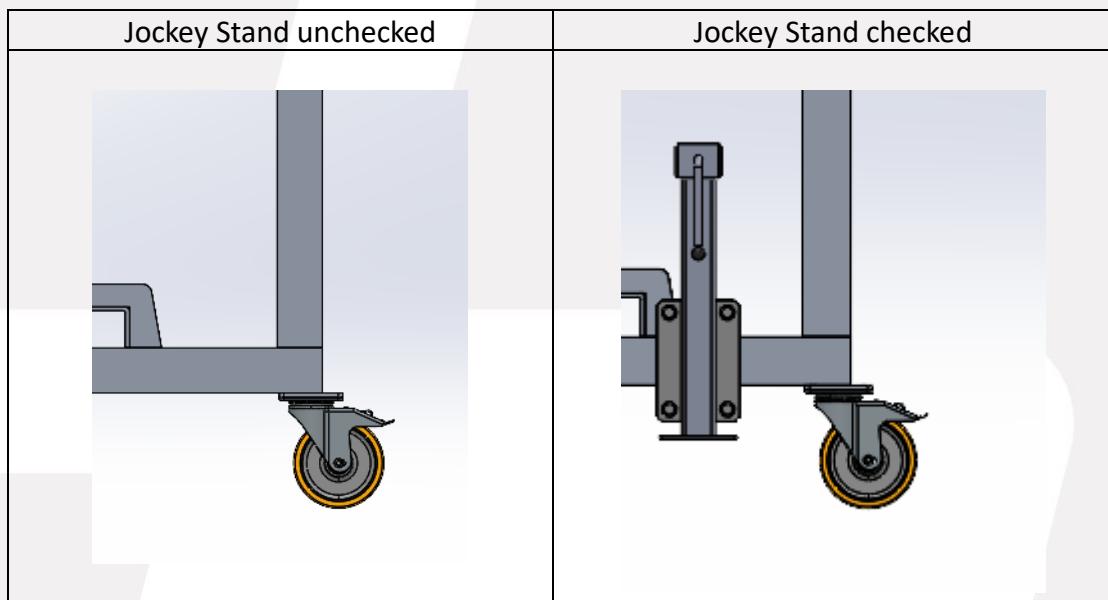
7.1.14. Overhang checkbox: Check this for platform that has overhang.

Overhang unchecked	Overhang checked

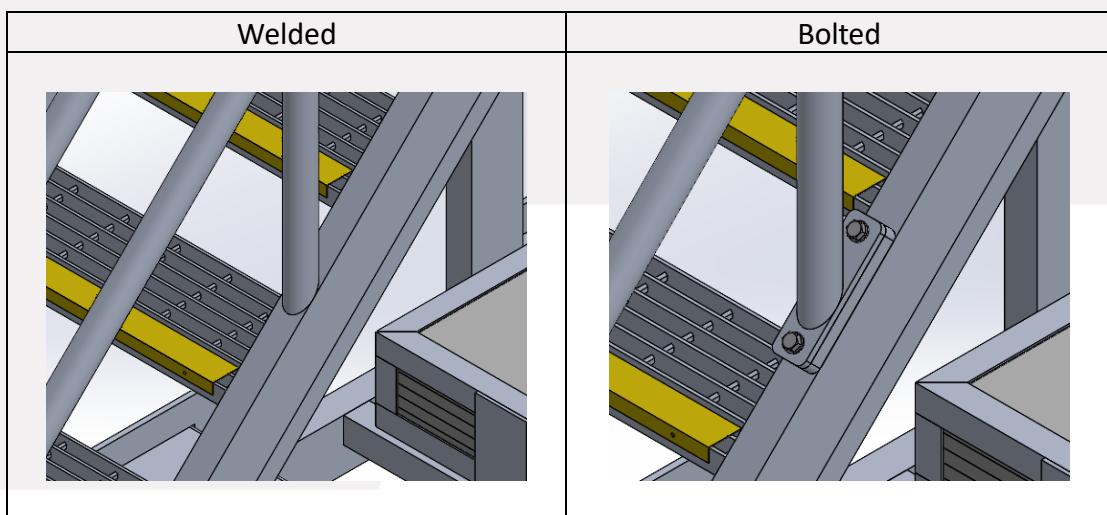
7.1.16. Frame: There are 2 types of frames, Fix and Wheel.



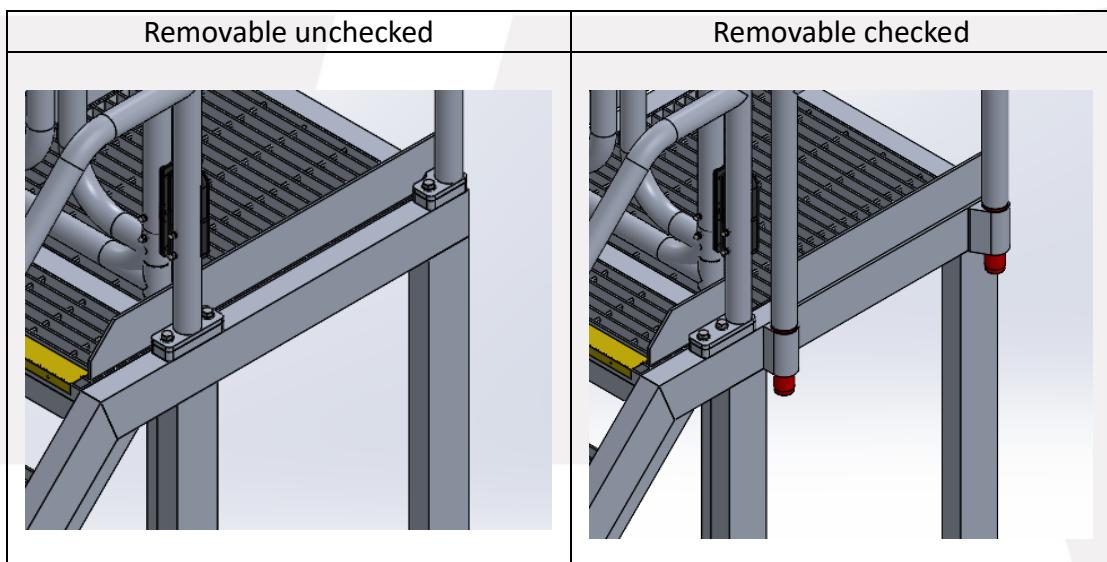
7.1.17. Jockey Stand checkbox: Check this to include the jockey stand. **Step-type platform and Fix frame do not support Jockey Stand.**



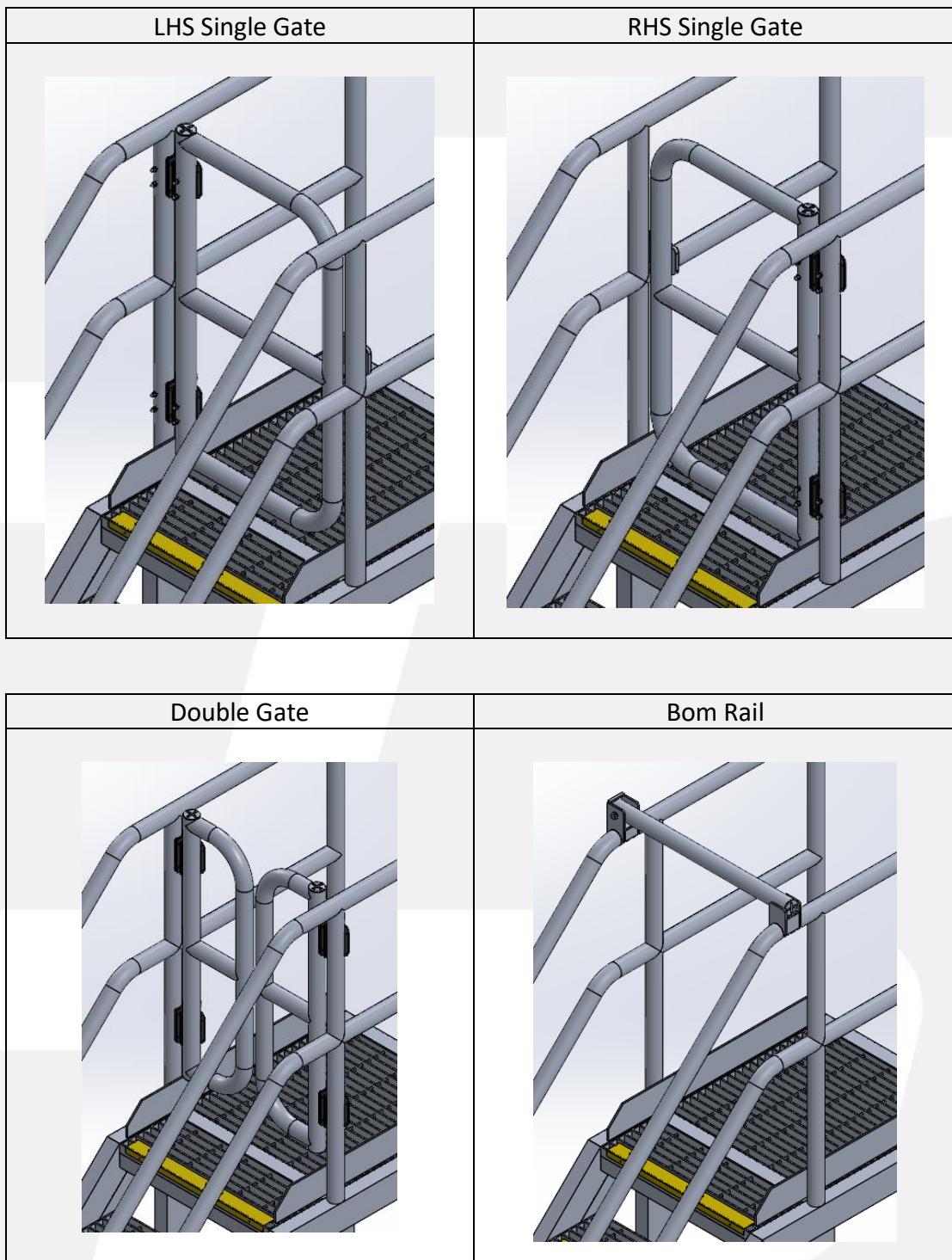
7.1.19. Handrail: There are 2 types of handrails, Welded and Bolted.



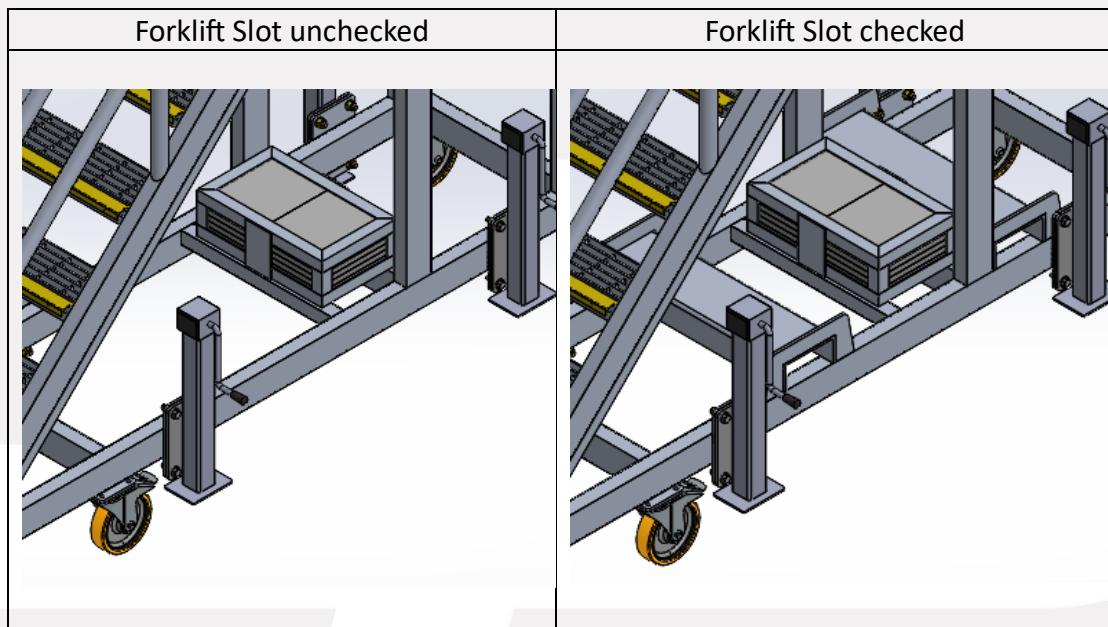
7.1.20. Removable: Check this for removable guardrail.



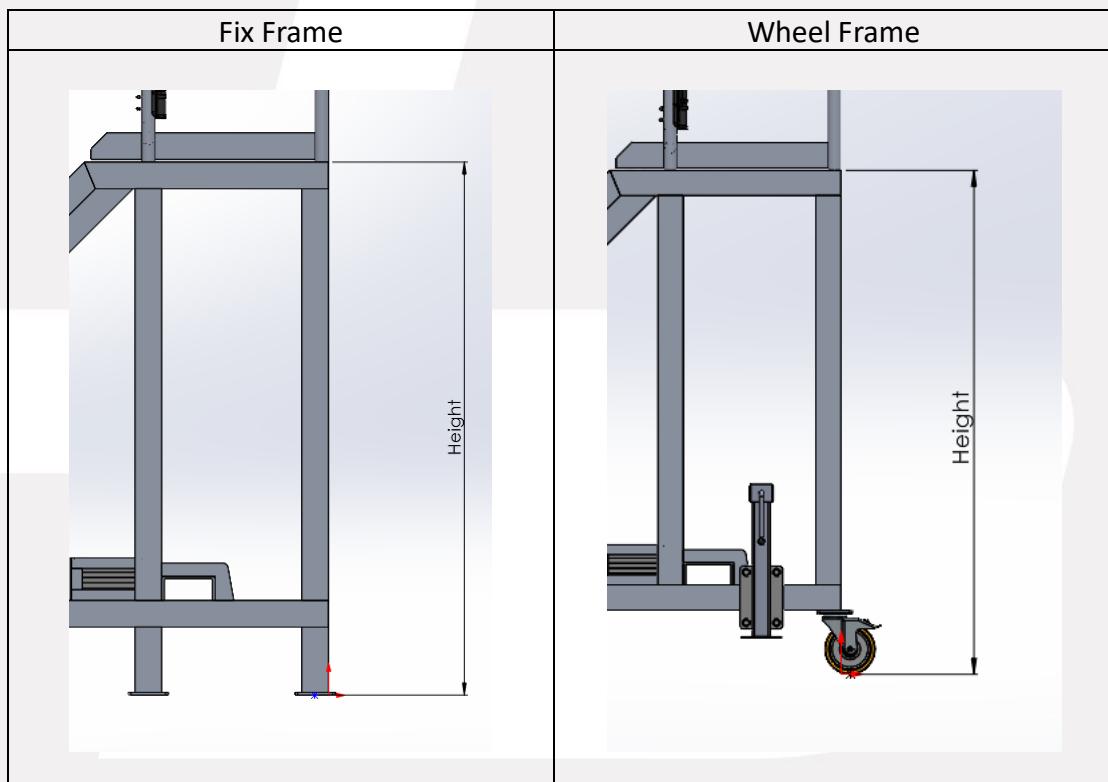
7.1.22. Gate: There are 5 options for gate, None, LHS Single Gate, RHS Single Gate, Double Gate and Bom Rail.



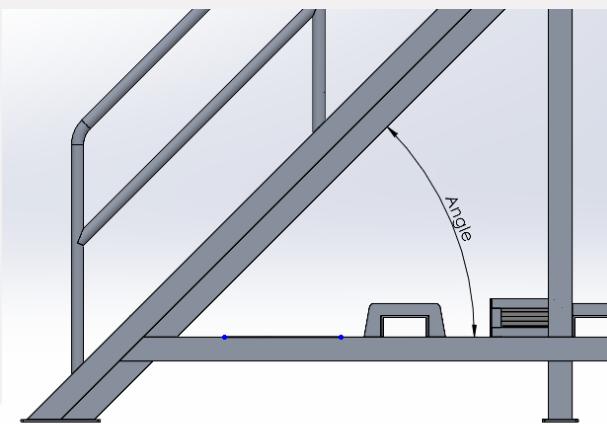
7.1.24. Forklift Slot checkbox: Check this for forklift slot. **Step-type platform does not support forklift slot.**



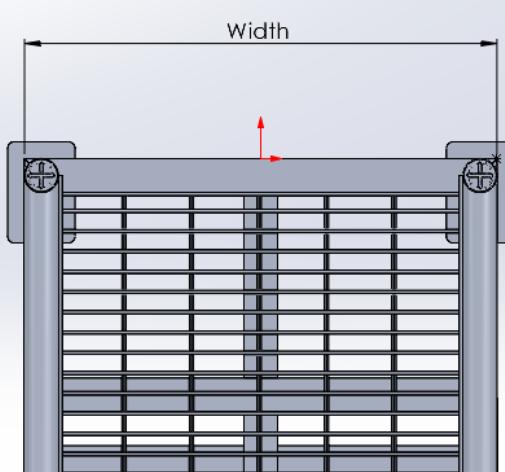
7.1.25. Height (mm): Height input for the platform in unit mm.



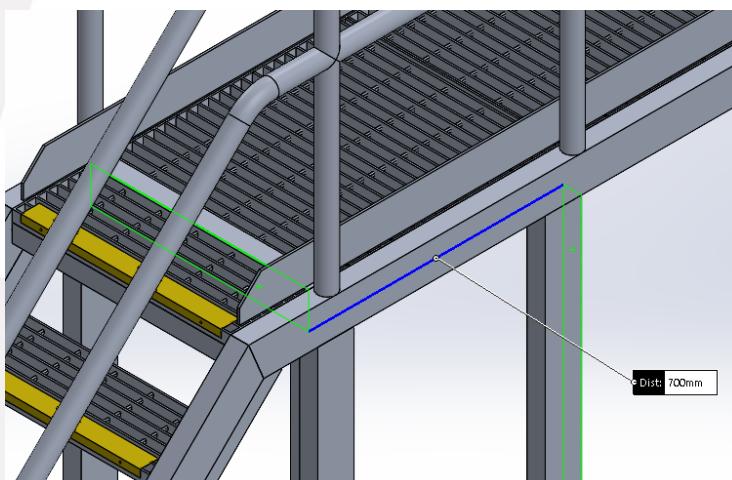
7.1.27. Angle (degree): Angle input for the platform in unit degree. Stairways platform only supports 20 to 45 degrees while Step-type platform only supports 60 to 70 degrees.



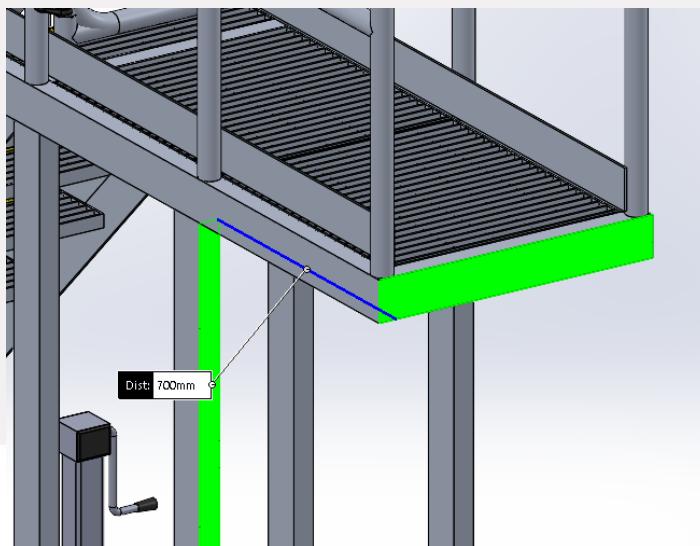
7.1.28. Width (mm): Stair width in unit mm.



7.1.29. Landing Length (mm): Landing length in unit mm. The distance measured from the back of top stair tread to the end of the frame.

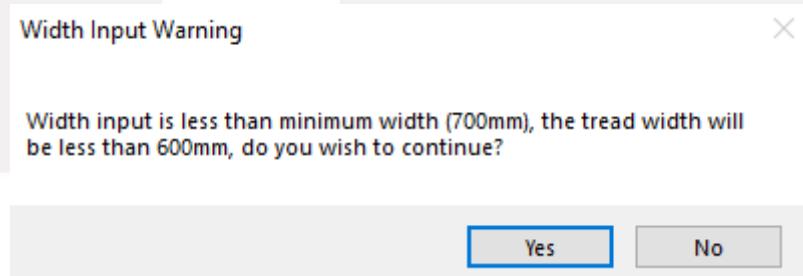


7.1.30. Overhang Length (mm): Overhand length in unit mm. The distance measured from the end of the frame to the end of top landing.



7.1.31. Once the user inputs all the parameters, click on Generate button. The Macro will validate the inputs first and display any error message if any input does not meet the criteria.

7.1.32. The width of stair tread for stairways platform should be more than 600mm while for step-type ladders should be within the range of 450mm ~ 750mm. Warning will be prompted if input does not meet the criteria. However, the user can choose to ignore the warning by selecting Yes.



7.1.33. For stairways platform, tread calculation will be carried out to calculate the tread risers (R) and goings (G) that fulfill the criteria below:

- 7.1.33.1. $130mm \leq R \leq 225mm$
- 7.1.33.2. $215mm \leq G \leq 335mm$
- 7.1.33.3. $540mm \leq (2 \cdot R + G) \leq 700mm$
- 7.1.33.4. $2 \leq \text{Number of tread} \leq 18$

7.1.34. For step-type platform, tread calculation will be carried out to calculate the tread risers (R) that fulfill the criteria below:

- 7.1.34.1. $200mm \leq R \leq 300mm$

7.1.36. The Models and Drawings will be generated and saved in the output location.

NO.	QTY	DESCRIPTION	PART NUMBER	MATERIAL
1	1	1100 X 1000 X 1000 MM	BT00000-PT-101	ALUMINIUM
2	1	A325 A2M 400 X 400 DRAIN	BT00000-PT-102	STEEL-TS
3	9	TS1A325ASM 215 X 600 SPAN	BT00000-PT-103	6053-TS
4	1	COUNTERWEIGHT	BT00000-PT-104	STEEL-ALUMINIUM
5	9	NAB EXCEEDED ANTI SLIP STAIR	6002113	ALUMINIUM

NO.	QTY	DESCRIPTION	LENGTH	MATERIAL
101	1	100X50X3 RHD	600	6050-TS
102	2	100X50X3 RHD	600	6050-TS
103	1	100X50X3 RHD	600	6050-TS
104	1	100X50X3 RHD	700	6050-TS
105	1	100X50X3 RHD	800	6050-TS
106	1	100X50X3 RHD	815	6050-TS
107	1	100X50X3 RHD	830	6050-TS
108	2	100X50X3 RHD	1445	6050-TS
109	2	100X50X3 RHD	1598	6050-TS
110	2	100X50X3 RHD	1600	6050-TS
111	1	100X50X3 RHD	2118	6050-TS
112	1	100X50X3 RHD	8143	6050-TS
113	2	50 X 50 SHD	25	6050-TS
114	2	50 X 50 SHD	605	6050-TS
115	2	50 X 50 SHD	608	6050-TS
116	2	50 X 50 SHD	650	6050-TS
117	2	TUBE 250 X 3	650	6050-TS
118	2	TUBE 250 X 3	1011	6050-TS
119	2	TUBE 250 X 3	1020	6050-TS
120	2	TUBE 250 X 3	1045	6050-TS
121	2	TUBE 250 X 3	1314	6050-TS
122	2	TUBE 250 X 3	4220	6050-TS
123	2	TUBE 250 X 3	4413	6050-TS
124	2	FB 100 X 6	448	6050-TS
125	2	FB 100 X 6	450	6050-TS
126	2	FB 100 X 6	313	6050-TS
127	2	PLATE 10 X 45 X 100	6050-TS	
128	2	ACORN NUTS & SPRINGS	ALUMINIUM	
129	1	ACORN NUT	ALUMINIUM	

REVISIONS

REV:	DESCRIPTION	APPROVED	DATE
A	INITIAL CONCEPT DESIGN		

By: _____ Date: _____

Approved
Approved as corrected
Revise and resubmit

By: _____ Date: _____

Bendtech
INDUSTRIAL STAIRCASES
MANUFACTURERS & DESIGNERS
ST00000-AS-100-CL_A

QUOTATION ONLY DO NOT MANUFACTURE
DO NOT SCALE DRAWING
SCALE 1:100
REV 1.0
A3

WLL - 150 KG

REVISIONS

REV:	DESCRIPTION	APPROVED	DATE
A	INITIAL CONCEPT DESIGN		

Approved
Approved as corrected
Revise and resubmit

By: _____ Date: _____

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QUOTATION ONLY DO NOT MANUFACTURE
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SCALE 1:100
REV 1.0
A3