ArtiosCAD

Quick Reference Guide

MIMAKI ENGINEERING CO., LTD.

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Quick Reference Guide

This guide explains the necessary settings and methods for outputting data.

The Flow of Creating a Box

Configure the Environment

You can select to use one of three printing types in ArtiosCAD (plot, CAM and sample) to design and output a box. Check the separate “Connection Guide” beforehand and perform “Default file management”. P.1-3 “Default file management”

Setting “Default file management” allows you to select any of the printing types.

Select the Output Type

Select “Plot”.	Select “CAM”.	Select “Sample”.
• When you want to use simple output set-tings • When you want to determine the cutting sequence and direction for each line	• When you want to determine the cutting sequence for each line type • When you want to automatically optimize the cutting sequence and direction. • When you want to perform repetitive cutting	• When you want to output a special cutline • When you want to apply creasing twice

If “Plot” or “CAM”

Set by using ArtiosCAD.

1. **Set the cut direction and sequence.**
   - For “Plot”, refer to P.1-8 “Set the cut direction and sequence in “Sequence.””.
   - For “CAM”, refer to P.1-18 “CAM Tooling Setup Catalog”.
2. **Set tools and line colors. (If using plot output)**
   - Refer to P.1-13 “Output type: Plotting configuration”.

If “Sample”

Set by using ArtiosCAD.

1. **Create sample line types.**
   - Refer to P.1-8 “Set the cut direction and sequence in “Sequence.””.
2. **Set tools and line colors for each sample line type.**
   - Refer to P.1-15 “Output type: Sample configuration”.

Set the cutting conditions for each tool.

- Refer to P.1-22 “NC Export Tuning Table”.

Set the output.

- Refer to P.1-30 “Perform output”.

Perform output.

- Refer to P.1-35 “Output in ArtiosCAD”.

Managing Defaults

What is Defaults?

- The defaults includes the all settings for ArtiosCAD such as the display color of the screen and output settings.
- There are two types for the defaults; “Shared defaults” and “User defaults”. Each defaults has the following functions.

Shared defaults : Shared by the users who uses the same ArtiosCAD.

User defaults : Customized settings can be made for each user.

The defaults file registered to the user defaults can be used by the user who set the default file.

Important!

- If the defaults file exists both in the shared defaults pane and user defaults pane, and which file name is the same as the one you want to copy, the setting of "User defaults" is given priority over the one in the other pane.

You can confirm or change/add the contents of the defaults file.

- If you overwrite the defaults file which is changed/added, the change is reflected to the basic settings of the ArtiosCAD.
- A part of the settings can be selected and saved as a file.
  (→ P.1-3 “Saving the settings of the defaults”)
- You can import the saved defaults file to apply the setting contents.
  (→ P.1-4 “Importing the defaults”)
- If you want to change a part of the defaults settings, copy the file first, then edit it.
  (→ P.1-7 “Copying the defaults settings”)

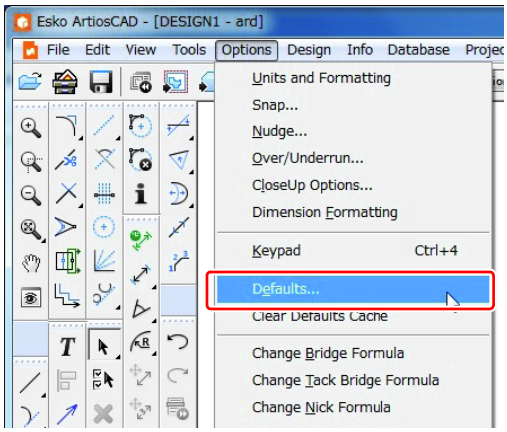
Saving the settings of the defaults

Save the settings of the defaults file in the following cases;

- If you want to backup the defaults file before updating the ArtiosCAD.
- If you want to send a message to our customer service concerning the settings when an error has occurred.

1 Select [Defaults...] in the [Options] menu.

- The [Defaults] window opens.

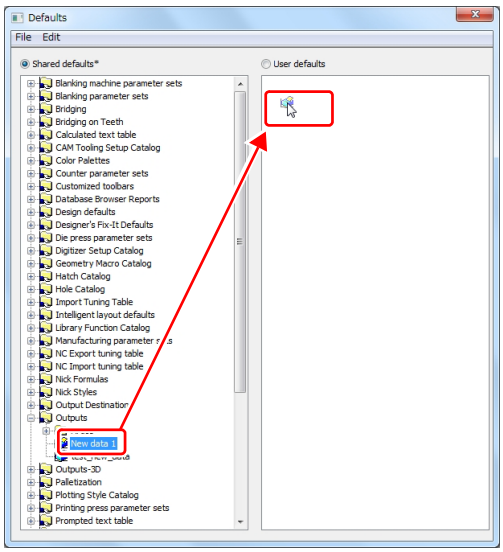


2 Select the contents you want to save from [Shared defaults] pane and copy it to [User defaults] pane.

(1) Click and open the settings folder icon you want to save in the [Shared defaults] list.
- The settings defaults data in the folder is displayed.

(2) Click the settings defaults data to save.

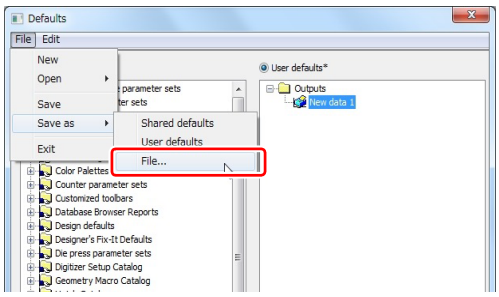
(3) Drag and drop the file you selected in the step 2 to the [User defaults] pane.



3 Save the user defaults as an *.adf file.

(1) Make sure that the [User defaults] is selected, click [File] - [Save as] - [File].

(2) Specify the file name and save.
- This completes the defaults file saving.

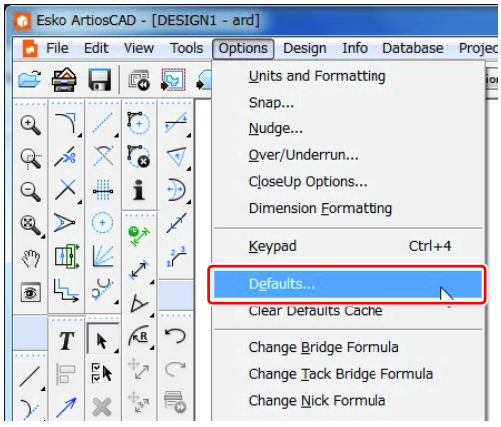


Importing the defaults

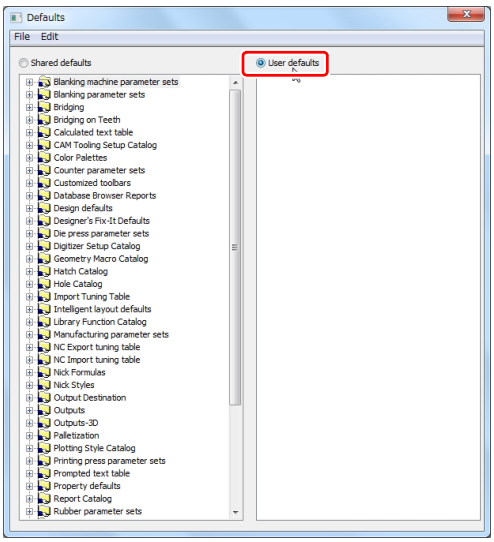
Import and use the defaults file you saved beforehand in the following cases;
- If you want to use the backup defaults file before updating the ArtiosCAD.

1 Select [Defaults...] in the [Options] menu.

- The [Defaults] window opens.

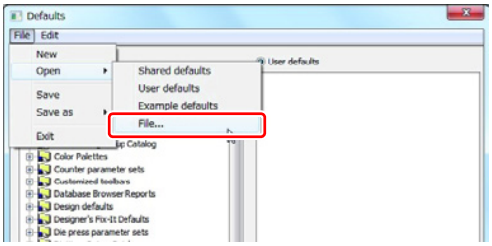


2 Click the [User defaults] radio button to ON.



3 Click [File] - [Open] - [File] and specify the defaults file (*.zip or *.adf file) you want to import.

- The explored file is displayed in the [User defaults] pane.

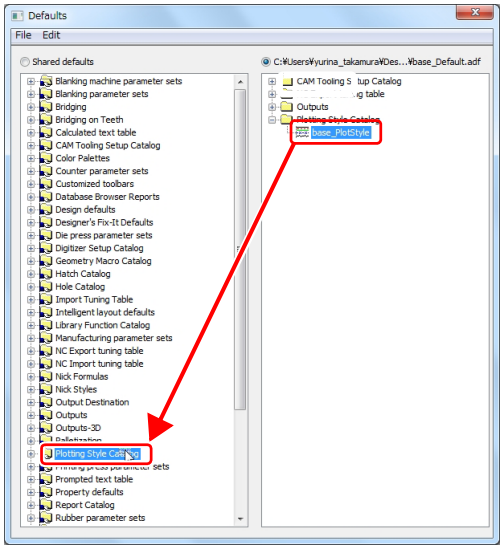


4 Open the file in the [User defaults] pane and copy it to the [Shared defaults] pane.

(1) Click the [+] button of the defaults data shown in the [User defaults] pane, display the set defaults data in the folder.

(2) Select the defaults data to copy.
- Confirm the folder name which includes the selected defaults data.

(3) In the [Shared defaults] pane, explorer the folder which name is the same as the one you confirm in step 2, and drag and drop the selected data to the folder.
- The selected defaults data is copied.
- If a defaults data which has the same name is exist in the shared defaults folder, the file is overwritten.

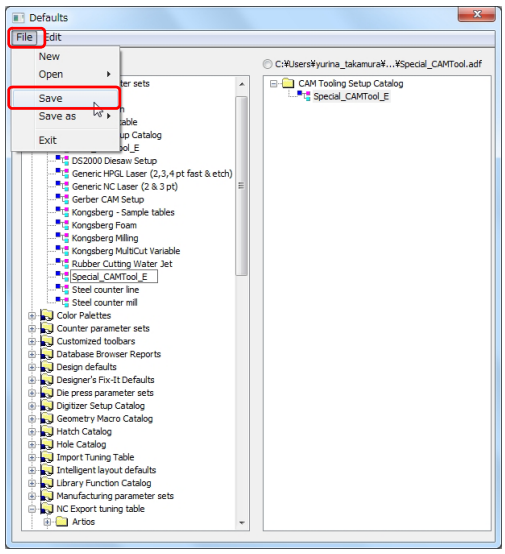


Important!
- If you do not want to overwrite the defaults data, change the file name in the [User defaults] pane first, then copy it to the [Shared defaults] pane. Please note that the software may not work properly as you set if the defaults data name has been changed.
- Changing the defaults data name in the [User defaults] pane
  1. Right-click the defaults data which file name is to be changed.
  2. Click [Rename].
  3. Input the file name.

(4) Repeat step 2 through step 3 and copy all the defaults data you want to import to [Shared defaults] pane.

5 Click the [Shared defaults] radio button to ON and [File] - [Save].

- This completes importing the defaults file.

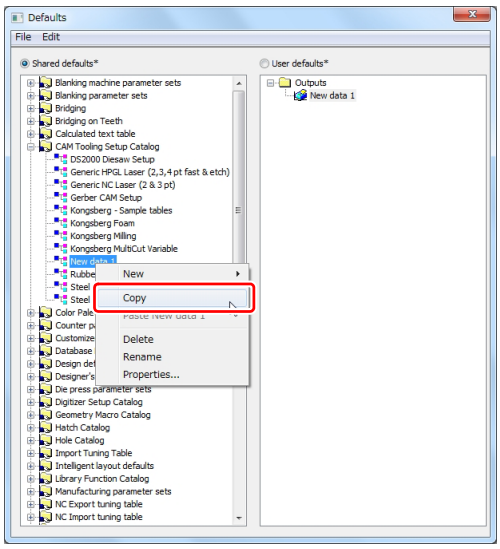


- After editing the defaults file, click [Option] - [Clear default cache] to apply the latest settings without re-starting the ArtiosCAD.

Copying the defaults settings

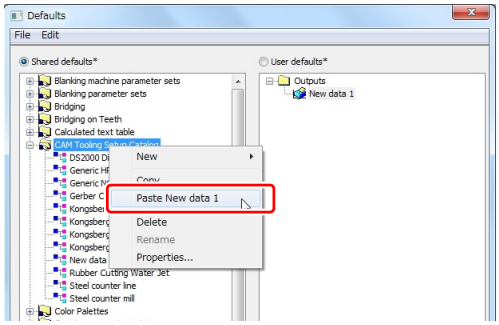
If you edit the settings of a defaults file leaving the original settings, copy and save the defaults file.
The procedure to copy the defaults file using the CAM Tooling Setup Catalog is described below.

1 **Right-click the defaults file you want to copy and select [Copy].**



2 **Right-click the folder which includes the copied defaults data, select [Paste].**

- The copied file is created.



Important!

- Paste the selected defaults data in the same folder. You cannot paste it to another folder.

- If you want to change the name of the copied defaults data.
  1. Right-click the copied defaults data.
  2. Select [Rename].
  3. Input the fine name.

Select the Output Type

To output using ArtiosCAD, you have to select the appropriate output type from the 3 selections (Plot/CAM/Sample) depending on the usage.

Output type: Selecting Plot

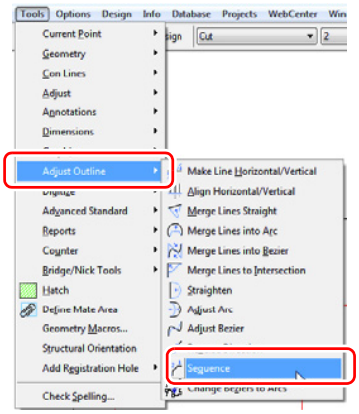
If you set the cut direction and cut sequence every time depending on the design to output, selecting “Plot” is recommended.

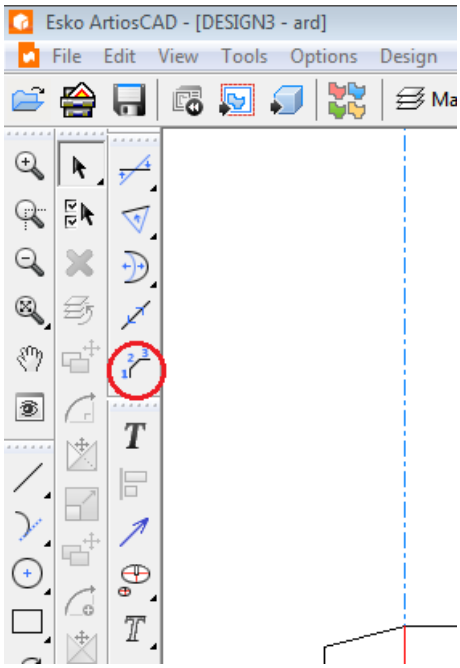
You have to set the following 2 sections to output in “Plot”.
- Setting the cut direction and sequence in “Sequence”. (The procedure is described below. Follow the steps below to set them)
- Set the plot style catalog referring P.1-12

1st. Set the cut direction and sequence in “Sequence”.

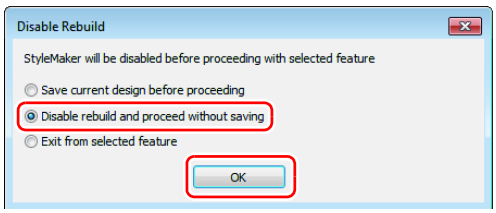
You can change the cut sequence and direction by changing the “Sequence”.

1 **Click [Sequence] icon.**
- You can also select by clicking the [Tools] menu - [Adjust Outline] - [Sequence].

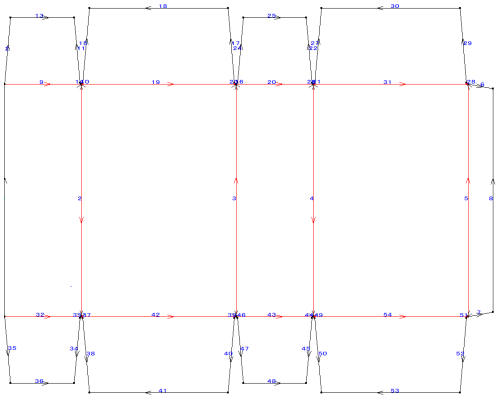




2 If [Disable Rebuild] dialog is displayed, select [Disable rebuild and proceed without saving] and click OK.

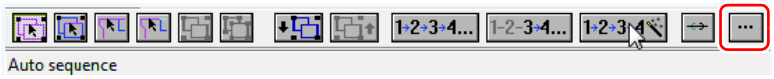


- Cut order and cut direction are displayed.



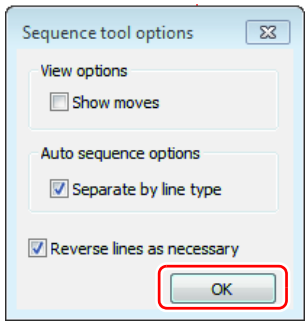
3 Set the sequence.

(1) Click [Sequence tool options] icon ··· on the right bottom of the window,
and open [Sequence tool options] dialog.

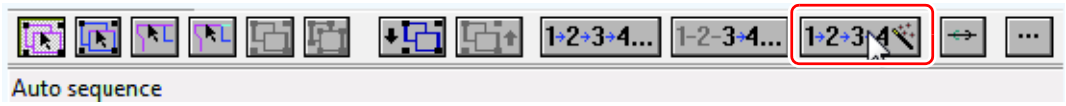


- When check [Auto sequence options] - [Separate by line type], each line type and Pointage are separated as a group, and you will be able to set the sequence on a group basis.
- When check [Reverse lines as necessary], the cut direction is reversed as needed, and provides the best sequence.

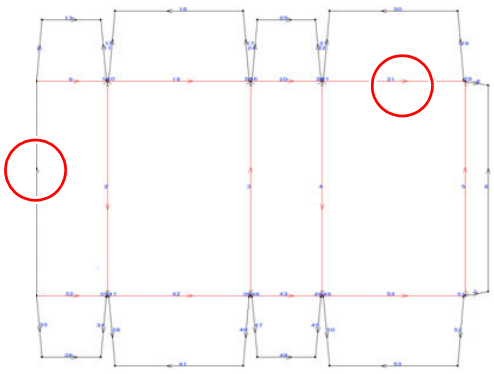
(2) Click OK.



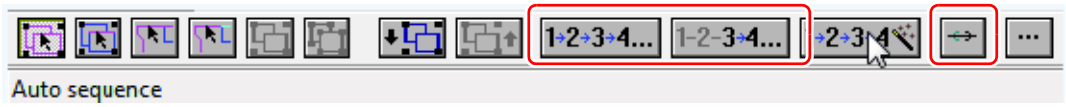
4 Click [Automatic sequence] 1→2→3→4 at the right bottom of the window, and Perform the automatic sequence.



- Automatic sequence is performed on the set value of 3 and appears the cut order (number) and cut direction (arrow) while grouping by line type.
  In this case, displays black line: 1 red line: 2.



5 In the case of changing the cut order or cut direction from the results of the automatic sequence execution of step 4.

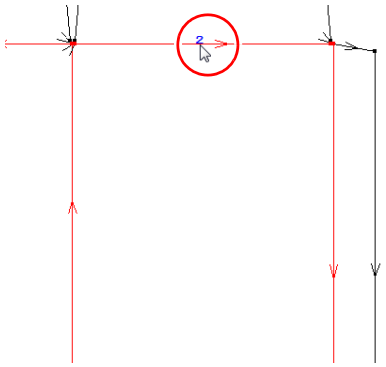


● Changing the cut sequence

(1) Click 1→2→3→4... or 1→2→3→4 , and click the number of which you want to change the cut order.
(2) The cut order is changed in the state that have been grouped by line type.

● Changing the cut direction

(1) Click ↔ .
(2) All the cut order will change in the reverse direction.



> • If needed to change the cut direction of every single line, you can do from [Reverse Direction] in [Tools] - [Adjust Outline]

2nd. Setting the plot style catalog(→ P.1-12)

Output type: Selecting CAM

Selecting the “CAM” for the output type is recommended if the tool and cut sequence for the output is already set.

> **You need to set the CAM Tooling Setup Catalog before selecting “CAM” as the output type.**
> • Refer to P.1-18 and set the CAM Tooling Setup Catalog.

1st. Setting the CAM Tooling Setup Catalog.(→ P.1-18)

> **Make the following settings to set the cut sequence and direction of every single line.**
> **1.** Set the CAM Tooling Setup Catalog.
> • Make the group number of every single line same on the [Tools Selection] tab.
> • Uncheck all the optimization box on the [Optimization] tab to OFF.
> **2.** Set the sequence.
> • Set the cut direction and sequence referring P.1-8 “Set the cut direction and sequence in “Sequence.””.

Output type: Selecting Sample

It's recommended to select “Sample” as the output if outputting a special cutline or doubling the crease line.

If “Sample” is selected as the output type, all the line designed by ArtiosCADare replaced to the sample type line (You need to create the sample line before the output (→ P.1-48), and select to which sample line should be replaced.)
Note that you can't select a desired line type if the line is either Cut/Crease/Zipper in the designed data.
The sample line types in the table to the right are used for each line type.

Line type on the design data	Sample line type to create
Cut	Sample knife
Crease	Sample crease with grain
Zipper	Sample knife

- Other than the line type shown in the table above, you need to set the sample line type to create.
- Assign tools and line colors for the created sample line type in the plot style catalog.

1st. Creating the sample line type

You can set the sample line type for the special line, such as the lead crease line.
To output a special cut line, refer to P.1-48 “Configuring the Sample Line Type” for setting the sample line type.

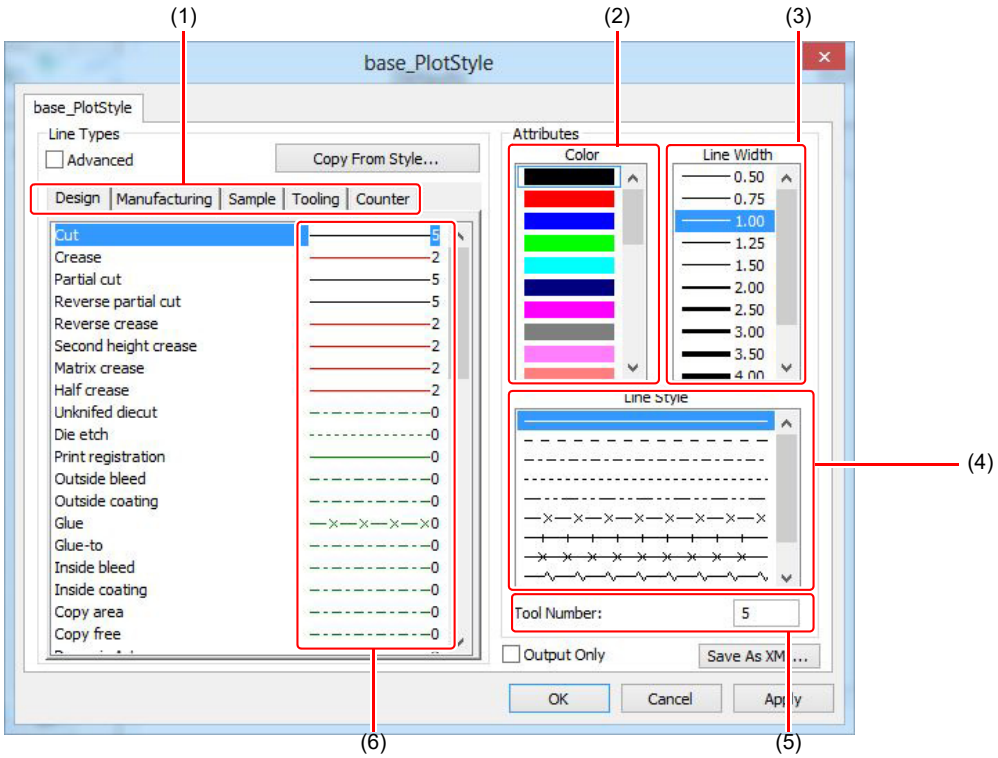
2nd. Setting tools and line colors for each sample line type (→ P.1-14)

Plotting Style Catalog

The plotting style catalog is used for configuring settings for each line type such as line color and style, and cutting tool.

[Plotting Style Catalog] Window

The types of setting tabs displayed in the plotting style catalog depend on the output type (plot, sample or CAM) used with ArtiosCAD. For details, refer to the setting pages for each output type.



No.	Name	Description
(1)	Tab	The setting tabs differ depending on the output type.
(2)	Color	Sets the displayed and output line color for each line type. • CAM driver output is not affected. • The selected color is outlined by a blue rectangle.
(3)	Line Width	Sets the line width for each line type. • The width is that displayed in ArtiosCAD and does not affect output. • The selected line width is outlined by a blue rectangle.
(4)	Line Type (Style)	Sets the line type (line style) for each line type. • If using the CAM driver, this item allows you to know which tool number in the preview corresponds to the line type (style) selected here. Output is performed in all straight lines regardless of the line type selected here.
(5)	Tool No.	Sets the tool number output for each line type. • Set the tool numbers in the NC Export tuning table for the Tool Number. Example: For Pen, set the Tool Number to 1.
(6)	Current setting status	Displays the line type, color and tool number set for each line type. (Currently selected item is highlighted in blue.)

Important! • The items to be set for the plotting style catalog vary depending on the output type.

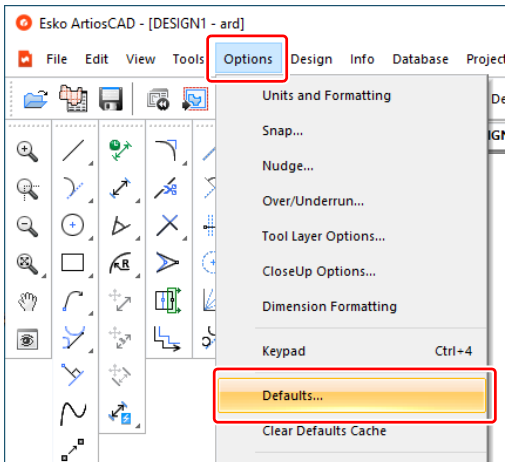
Configuring a Plotting Style Catalog

It is necessary to configure plotting style catalogs to correspond with the output types (plot, sample or CAM) used with ArtiosCAD.

● Output type: Plotting configuration

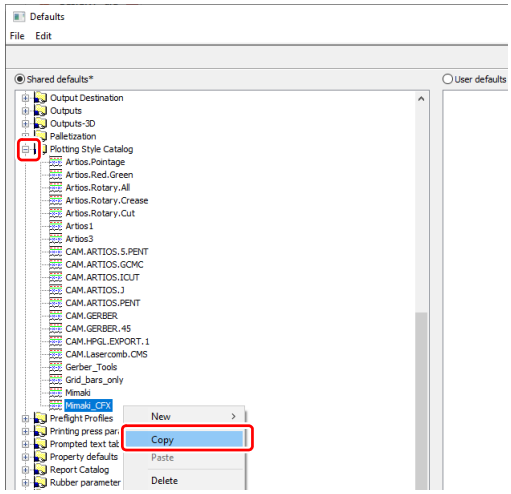
1 Select [Defaults...] in the [Options] menu.

- The [Defaults] window opens.



2 Click the [+] symbol on the left side of the "Plotting Style Catalog" folder in the [Shared defaults].

- Check the folder contents.

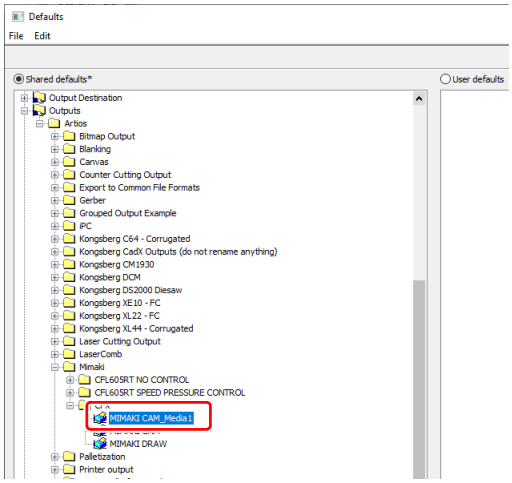


3 Copy the plotting style catalog that you want to edit.

- Refer to P.1-3 "Saving the settings of the defaults" to perform the copy.
- Be sure to copy a CFX plotting style catalog provided by Mimaki.
- Use half-width alphanumeric characters to name the copied file.

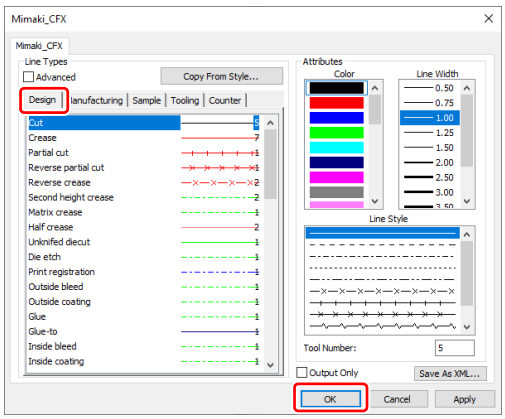
4 Double-click the plotting style catalog that you want to edit.

- Check that the [Design] tab is selected.



5 Configure the settings for each line type and click OK.

- For more detailed information regarding the line type settings, refer to P.1-12 “[Plotting Style Catalog] Window”.
- Clicking Cancel instead of OK cancels the settings you have just specified.

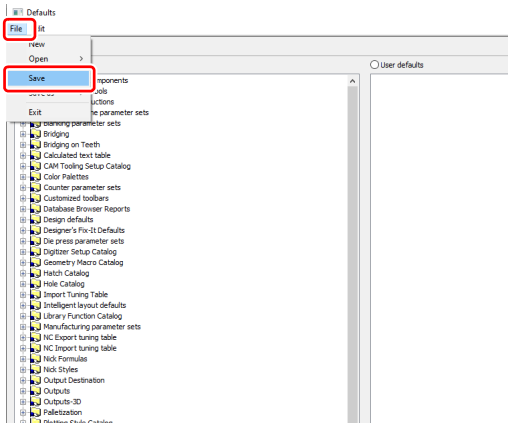


Important!

- The output preview displays the attributes (line color, line width, and line type) set for each line type. However, all lines are output as straight lines during actual output.
- The tool numbers set for each line type are output. However, lines types where the tool number was set to 0 are not output.

6 Click [Save] in the [File] menu.

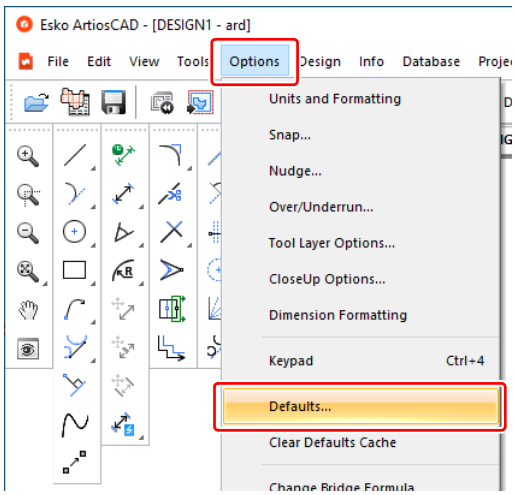
- The shared defaults are saved.



● Output type: Sample configuration

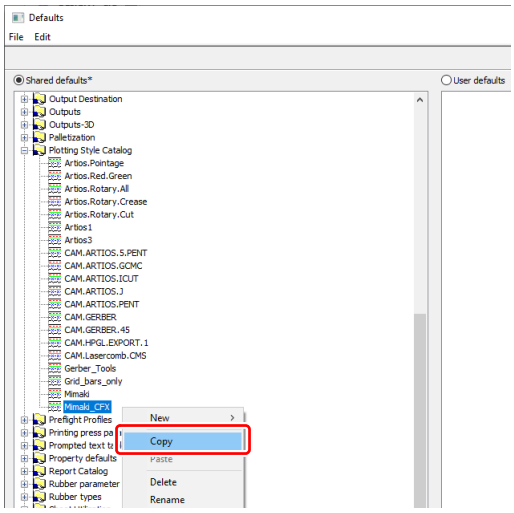
1 Select [Defaults...] in the [Options] menu.

- The [Defaults] window opens.



2 Click the [+] symbol on the left side of the "Plotting Style Catalog" folder in the [Shared defaults].

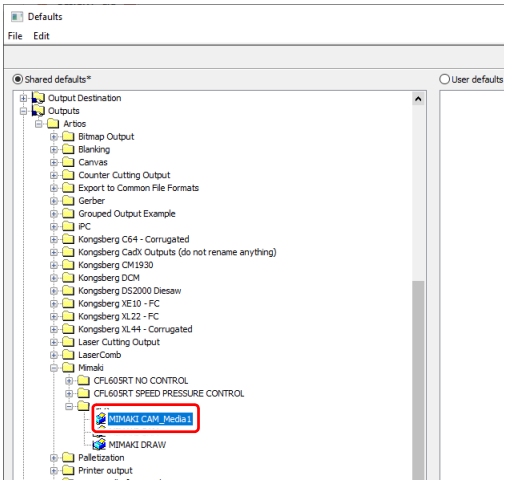
- Check the folder contents.



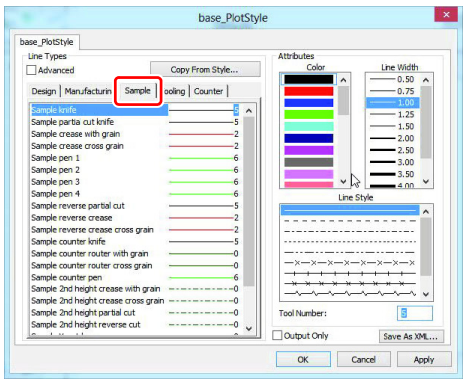
3 Copy the plotting style catalog that you want to edit.

- Refer to P.1-3 "Saving the settings of the defaults" to perform the copy.
- Be sure to copy a CFX plotting style catalog provided by Mimaki.
- Use half-width alphanumeric characters to name the copied file.

4 Double-click the plotting style catalog that you want to edit.

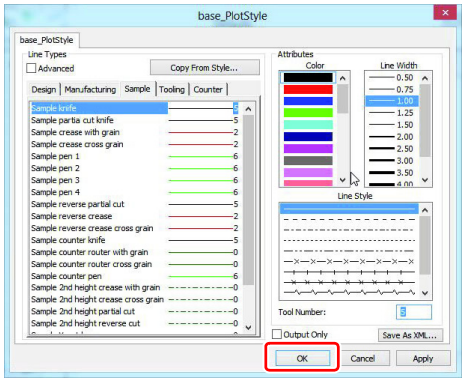


5 Select the [Sample] tab.



6 Configure the settings for each sample line type and click OK.

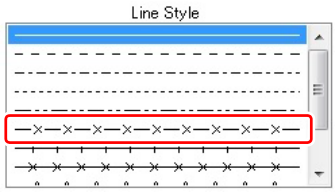
- For more detailed information regarding the line type settings, refer to P.1-12 “[Plotting Style Catalog] Window”.
- Clicking Cancel instead of OK cancels the settings you have just specified.



Important!

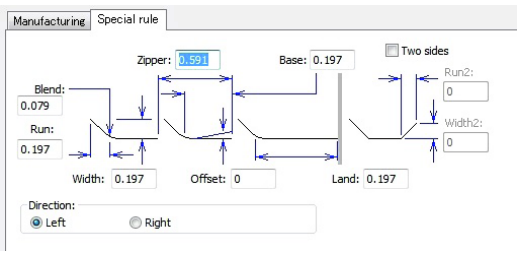
- The output preview displays the attributes (line color, line width, and line type) set for each line type. However, all lines are output as straight lines during actual output.
- The tool numbers set for each line type are output. However, lines types where the tool number was set to 0 are not output.

- **Output when the [Line Type (Line Style)] set in the “Plotting Style” window is anything other than a straight line**
  For example, the preview and output are as shown below when the line type (line style) on the right is selected.



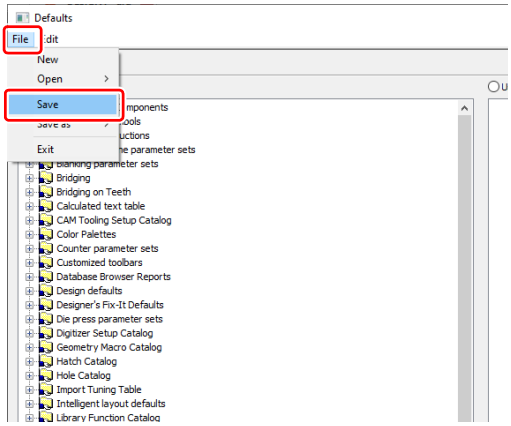
- **Straight line output is not performed during CAM driver output in the following type of case.**
  Straight line output is not performed during CAM driver output for line types included in [Rule type]-[Zipper rule].

- The line type for [Rule type] is output according to the style specified in the [Special rule] tab under [Options]-[Defaults]-[Special rule].



7 Click [Save] in the [File] menu.

- The shared defaults are saved.

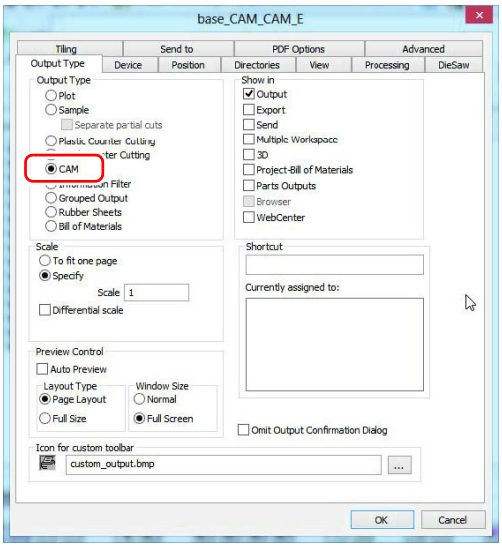


CAM Tooling Setup Catalog

The CAM tooling setup catalog is the catalog that is always used when the output type is set to “CAM”.

Settings configured by using the CAM tooling setup catalog

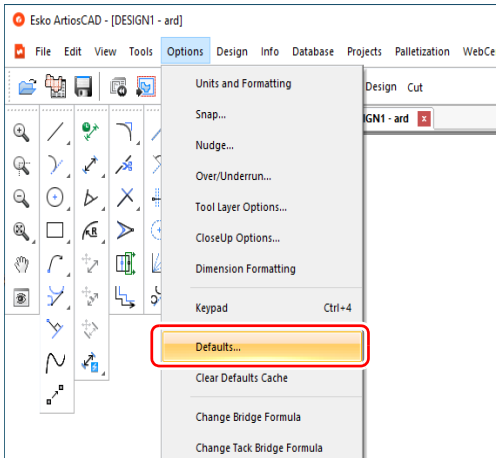
- Assign an operation tool used at output for each line type.
- Configure the output sequence for each line type.



Configuring a CAM tooling setup catalog

1 Select [Defaults...] in the [Options] menu.

- The [Defaults] window opens.



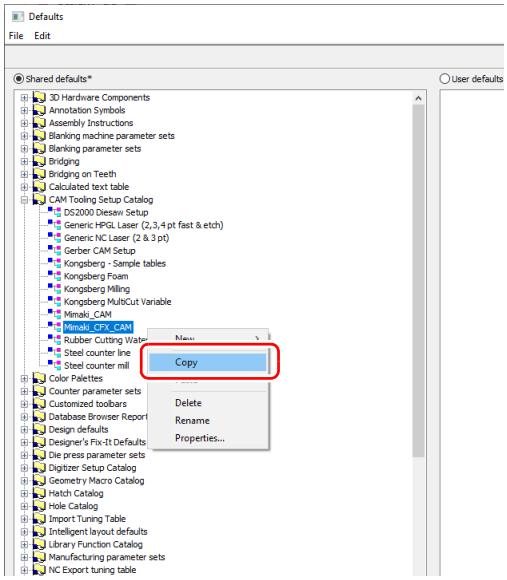
2 Copy the CAM tooling setup catalog.

(1) Click the [+] symbol on the left side of the “CAM Tooling Setup Catalog” folder in the [Shared defaults].

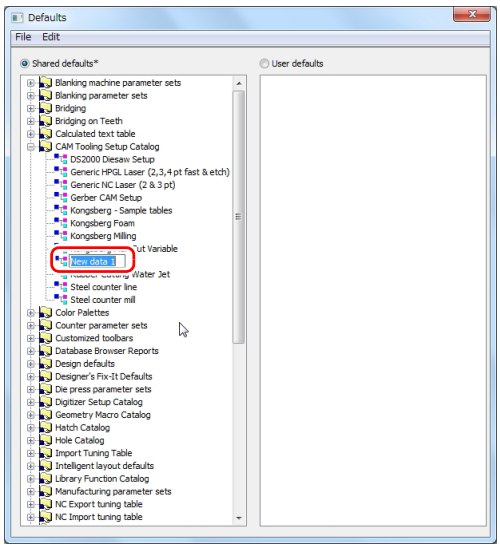
- Check the folder contents.

(2) Copy the CAM tooling setup catalog that you want to edit.

- Refer to P.2-6 “Managing Defaults” to perform the copy.
- Be sure to copy a CFX CAM tooling setup catalog provided by Mimaki.

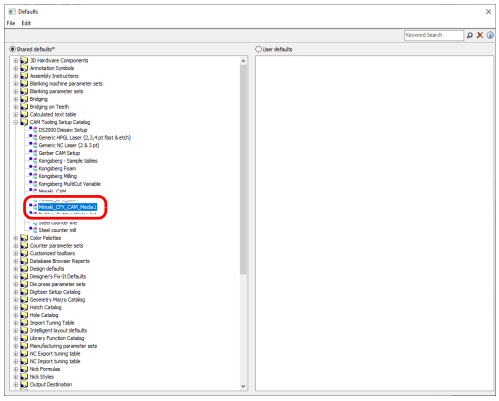


- Use half-width alphanumeric characters to name the copied file.

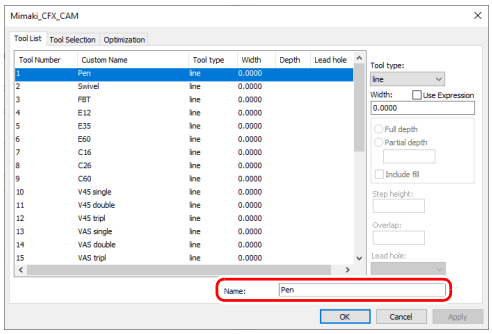


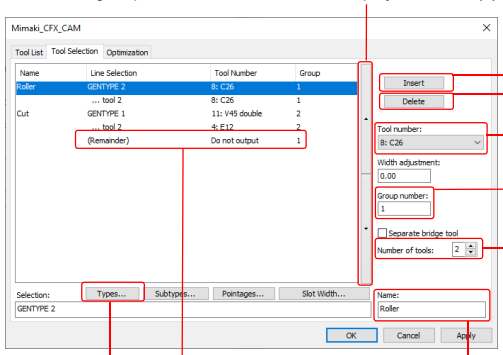
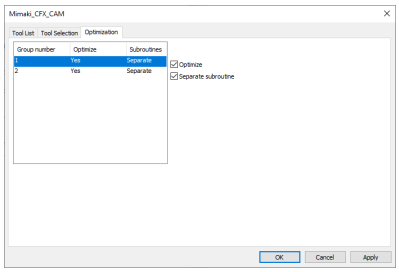
3 Double-click the CAM tooling setup catalog that you want to edit.

- The settings window for the selected catalog opens.
- This window displays [Tool List], [Tool Selection] and [Optimization] tabs.



4 Editing a CAM tooling setup catalog

<table>
<tr><th></th><th>Description</th><th>Comments</th></tr>
<tr><td>[Tool List] tab</td><td>You can specify a name for each tool number.
  </td><td>• To input a name, click on the tool you want to edit and input the name in the [Name] field outlined in red. (It is useful to register a tool name for each pen number.)

Important!
• Do not change the tool number. Doing so could cause an unexpected operation.</td></tr>
<tr><td>[Tool Selection] tab *1</td><td>You can set the tool used during output to the plotter for each “Line type”.
 
For moving the selected setting up or down.
The cutting sequence is not affected if the display is moved. (1)
Click if you want to add a new setting.
Deletes the currently selected setting (highlighted in blue).
Selects the tool operated for the line type. (2)
Sets the group number (1 to 100).
• Cutting is performed starting from the smallest group number.
• Set the same group number if you want to cut multiple line types in the same cutting sequence.
Use this setting if you want to make two or more cuts at the same location. (You can specify a maximum of eight cuts for each line type.) (3)
You can specify a name for each line type.
Inputing line type names makes it easier to understand the line types later.
Applied to all line types that are not set.
Cannot be deleted, moved or named, and the line type cannot be selected.
Displays the [Type] window to perform line type selection. (4)</td><td></td></tr>
<tr><td>[Optimization] tab</td><td>Optimizes each group specified by a “Group number” on the [Tool Selection] tab and allows you to set sub-routines.
Set “Optimize” to “Yes” to optimize the output sequence and cutting direction for the line types in the selected group.
  </td><td></td></tr>
</table>

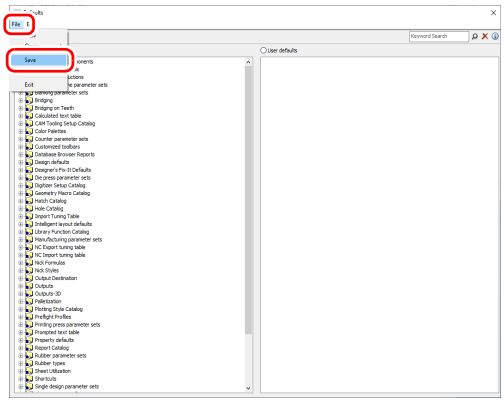
*1. (1) If there are two or more line type settings, the setting at the top is enabled and all other settings are disabled.
The cutting sequence is not affected if the display is moved.
(2) If there is a line type that is not output, select either “Do not output” or “Size only” for the [Tool no.].
When “Do not output” is selected:
Only the data of the cut positions (coordinates) for data of line types (other than those output) that is not output is moved to the origin side and output accordingly.
When “Size only” is selected:
The position of the data that is not output is blank. Data of other cut positions (coordinates) are not affected.
(3) The number of cuts made is limited to the number set for the number of tools. You can change the number of cuts made by each tool.
If the number of tools is set to “2” or more, items are automatically added under the currently selected item. Tool settings and similar settings can be specified for these items in the same manner as regular settings.
If the group number of each tool is the same, all tools are output for each line segment. Additionally, the output sequence starts from the tool specified above.
(4) Do not configure any other items except for line selection on the [Design] tab in the [Type] window.
The selected line type is displayed as “GENTYPE *”.

5 Click [OK] when all settings for all tabs have been completed.

- Click on the [x] to close the window and cancel all settings specified until now.

6 Select [Save] in the [File] menu to save the shared defaults.

- This completes configuration of the CAM tooling setup catalog.



Output sequence according to the settings of the CAM tooling setup catalog

The output sequence changes according to the settings of the CAM tooling setup catalog. The following are examples of changing the output sequence. Refer to these examples when configuring.

- **Group settings and output sequence**
  Output is performed in sequence from the smallest number if group numbers have been assigned to tools in the CAM Tooling Setup Catalog.

Line type	Tool	Group
Type A	5	2
Type B	2	1

  <<Example shown on right>>
  Output is performed in the following sequence: Type B (Tool 2) ⇨ Type A (Tool 5)

- **Different tools or groups are set for the same line type**
  Output is performed for the items set in the upper part of the [Tool Selection] tab.
  (Setting items below these are disabled.)

Line type	Tool	Group
Type A	5	3
Type A	5	1
Type B	2	2

  <<Example shown on right>>
  Output is performed in the following sequence: Type B (Tool 2) ⇨Type A (Tool 5)
  Settings of “Type A” (highlighted in gray) are disabled.

- **Multiple tools are assigned for a single line type and each tool group is the same**
  Items are output starting from the one set at the top if the same group is assigned to a single line type.

Line type	Tool	Group
Type A	2	1
Tool 2	5	1
Tool 3	6	1

  <<Example shown on right>>
  TypeA (Tool 2) ⇨ Type A (Tool 5) ⇨ Type A (Tool 6)

- **Multiple tools are assigned for a single line type and each tool group is different**
  Output is performed starting from the smallest group number if different groups are assigned to a single line type.

Line type	Tool	Group
Type A	2	3
Tool 2	5	1
Tool 3	6	2

  <<Example shown on right>>
  Output is performed in the following sequence (output by each path): TypeA (Tool 2) ⇨ Type A (Tool 5) ⇨ Type A (Tool 6)

- **If all line types have the same group number**
  Output is performed in the set cut order and direction for each line according to the sequence.
  For changing the sequence, refer to P.1-8 “Set the cut direction and sequence in “Sequence.””. When changing the sequence, uncheck all group “Optimize” check boxes in the [Optimization] tab of the CAM tooling setup catalog.

NC Export Tuning Table

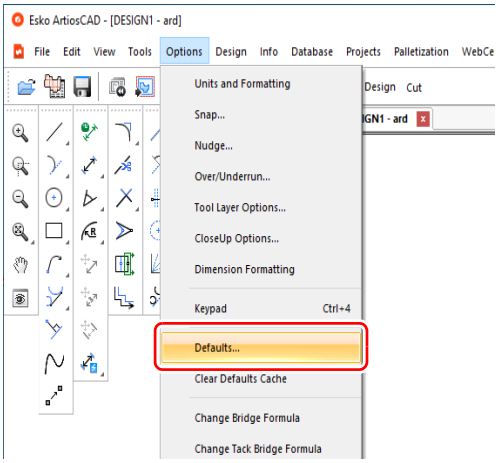
The NC Export tuning table is used for setting the tool output conditions (such as speed and pressure) used with CAM driver output.
Prepare multiple NC Export tuning tables and change to these when performing output if changing the output conditions for each tool in accordance with the output type of media.

> Important! • Be sure to copy the settings provided by Mimaki for using NC Export tuning tables.

Configuring an NC Export Tuning Table

1 Select [Defaults...] in the [Options] menu.

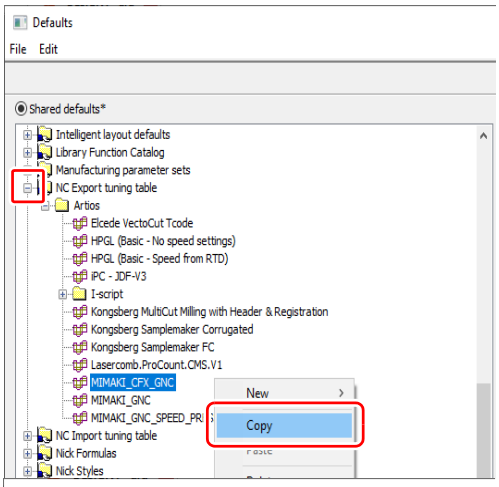
- The [Defaults] window opens.



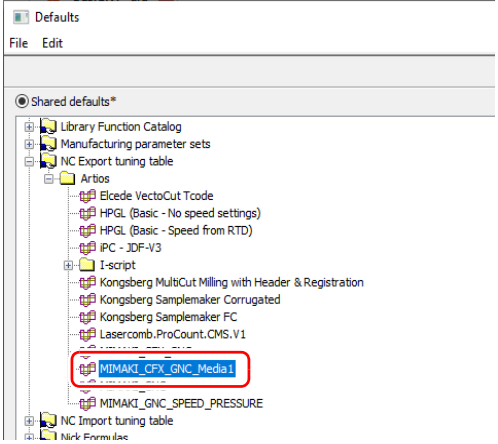
2 Copy the NC Export tuning table of the output condition that you want to control.

(1) Click the [+] symbol on the left side of the “NC Export tuning table” folder under “Shared defaults”.
- Check the folder contents.

(2) Copy the NC Export tuning table that you want to edit.
- Refer to P.3 “Managing Defaults” to perform the copy.
- Be sure to copy an NC tuning table provided by Mimaki.
- Use half-width alphanumeric characters to name the copied file.

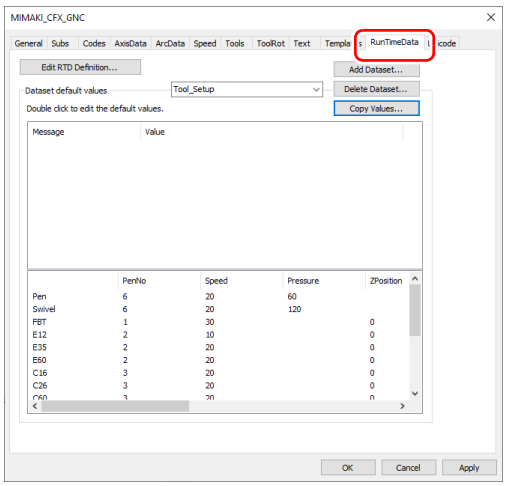


3 Double-click on the created NC Export tuning table to open it.

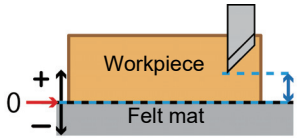


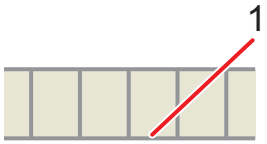
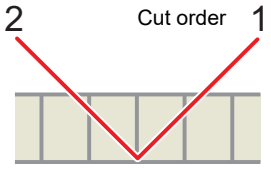
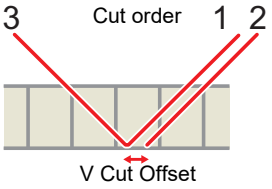
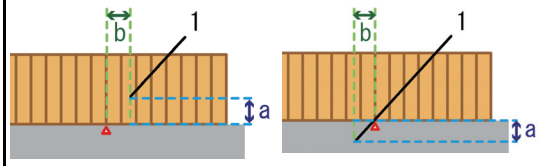
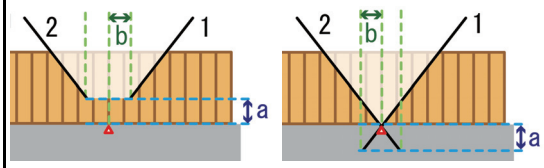
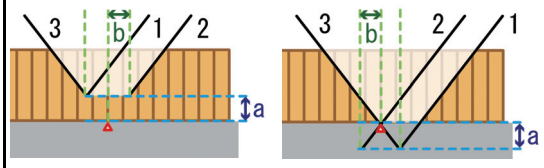
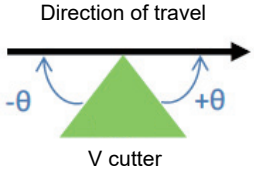
4 Click the [RunTimeData] tab.

- The settings for tool numbers 1 to 16 are displayed in the bottom half of the screen.
  The “PenNo” values for the second column correspond to the pen numbers assigned by using [Pen No. Assignment] of the plotter.



- The table below describes the items for the [RunTimeData] tab.

Item (Name)	Description	Range (Unit)	Value Changes
Tool No.	Tool number set for each line type in the plotting style catalog.	-	Do not change.
PenNo	Set the pen number assigned in the plotter. • Set the pen number assigned for the tool listed in Rows.	1 to 8	Can be changed.
Speed (Cut speed)	Set the speed in the XY direction during cutting.	0.1 to 100 (0.1 cm/s)	Can be changed.
Pressure (Cut pressure)	Set the pressure during cutting. • Set 0 to 150 g for Pen, and 0 to 1000 g for Swivel.	0 to 1000(g)	Can be changed.
ZPosition	Set the Z position for the tool tip when the tool moves down. • When this is set to 10, then 1 mm above the Z origin becomes the Z position. • When performing V-Cuts, set the Z position to 0. • Illustration of the Z position settings (viewed from the side) 	-20 to 560 (0.1 mm)	Can be changed.

<table>
<tr><th>Item (Name)</th><th>Description</th><th>Range (Unit)</th><th>Value Changes</th></tr>
<tr><td>V-Cut method</td><td>Set the V-Cut method.
• 0: Single cut, 1: Double cut, 2: Triple cut
• Illustration of the V-Cut (viewed from the side)
• Single cut
 
• Double cut
 
• Triple cut
  </td><td>0 to 2</td><td>Do not change.</td></tr>
<tr><td>Z-axis down (V Cut Z Uncut Value)</td><td>Set the thickness of the workpiece to be left uncut during a V Cut.
• If this is set to 100, the tip of the V-Cut tool reaches 1 mm above the Z position.
• If you want to cut through the workpiece, set the V Cut Z Uncut Value to a value less than 0.</td><td rowspan="2">• Illustration (viewed from the side)
a) V Cut Z Uncut Value
b) V Cut Width to Fold
• Single cut
• If cutting through
 
• Double cut
• If cutting through
 
• Triple cut
• If cutting through
  </td><td>-200 to 2000 (0.01 mm)</td><td>Can be changed.</td></tr>
<tr><td>Fold width correction V Cut Width to Fold</td><td>Set the offset amount (fold width) from the center position of the cut vector during a V-Cut.
• If this is set to 100, the tip of the V-Cut tool reaches 1 mm to the left and the right of the cut vector.
If this is set to -999, the fold width is automatically calculated from the V Cut Z Uncut Value.</td><td>-200 to 2000 (0.01 mm)</td><td>Can be changed.</td></tr>
<tr><td>θ correction (Theta Correct)</td><td colspan="2">Set the theta correction value during a V-Cut.
• Illustration of theta correction (viewed from above)
  </td><td>-200 to 200 (0.1°)</td><td>Can be changed.</td></tr>
</table>

Item (Name)	Description	Range (Unit)	Value Changes
rpm	Set the speed of the end mill. • If this is set to 30, the router head rotates at 30,000 rpm.	5 to 60 (1000 rpm)	Can be changed.
Z Speed (Z down speed)	Set the speed at which the tool moves down in the Z direction.	1 to 500 (1 mm/s)	Can be changed.

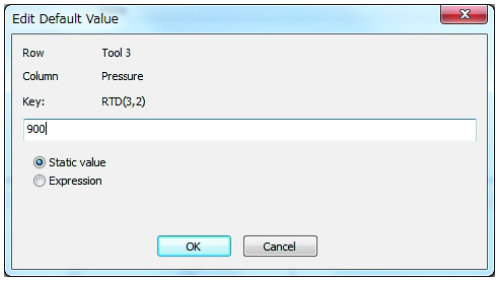
- The table below describes the setting values for each tool number.

Important!
- Do not change the values for cells that are yellow in the table below.
- Do not enter values for items with no initial value listed.
- Do not delete the values for items with an initial value listed.

Tool number	Rows	PenNo	Speed	Pressure	ZPosition	V-Cut method	Z-axis down	Fold width correction	θcorrection	rpm	ZSpeed	Assigned Tool
1	Pen	6	20	60								Pen
2	Swivel	6	20	120								Deflection cutter
3	FBT	1	30		0							Flat blade (Tangential cutter)
4	E12	2	10		0							Motorized reciprocating tool, Amplitude: 1.2 mm
5	E35	2	20		0							Motorized reciprocating tool, Amplitude: 3.5 mm
6	E60	2	20		0							Motorized reciprocating tool, Amplitude: 6.0 mm
7	C16	3	20		0							Marking gauge Diameter: 16 mm
8	C26	3	20		0							Marking gauge Diameter: 26 mm
9	C60	3	20		0							Marking gauge Diameter: 60 mm
10	V45 single	4	20		0	0	0	0	0			V-Cut tool 45° single cut
11	V45 double	5	20		0	1	100	100	0			V-Cut tool 45° double cut
12	V45 triple	7	20		0	2	100	100	0			V-Cut tool 45° triple cut
13	VAS single	4	20		0	0	0	0	0			Cut tool Angle selection type Single cut
14	VAS double	5	20		0	1	100	100	0			Cut tool Angle selection type Double cut

Tool number	Rows	PenNo	Speed	Pressure	ZPosition	V-Cut method	Z-axis down	Fold width correction	θcorrection	rpm	ZSpeed	Assigned Tool
15	VAS triple	7	20		0	1	100	100	0			Cut tool Angle selection type Triple cut
16	Milling	8	20		0					30	10	Milling tool

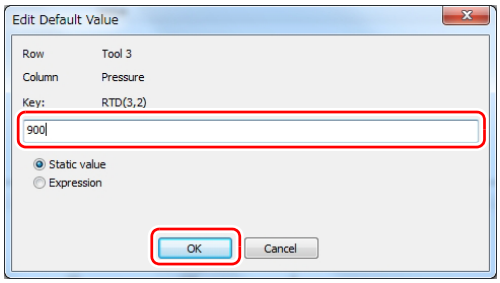
5 For tools registered in RunTimeData, select and double-click the value you want to change.



6 Change the set values and click OK.

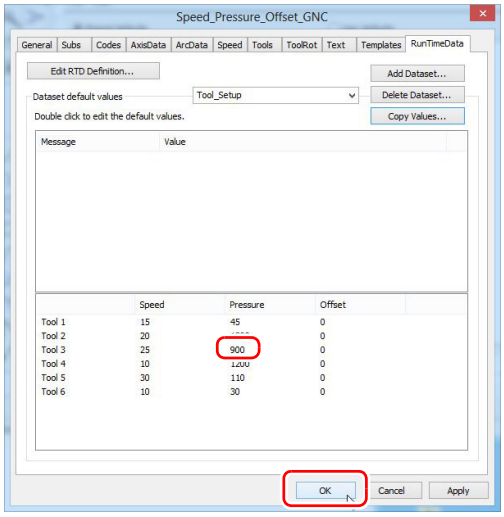
Important!

- The threshold values for the speed and pressure of each tool vary for each plotter. Set values that are outside the range of the plotter being used are automatically changed to values within the setting range.
- Clicking OK with no values input into the input field can result in unexpected problems during output. Be sure to always input a set value.

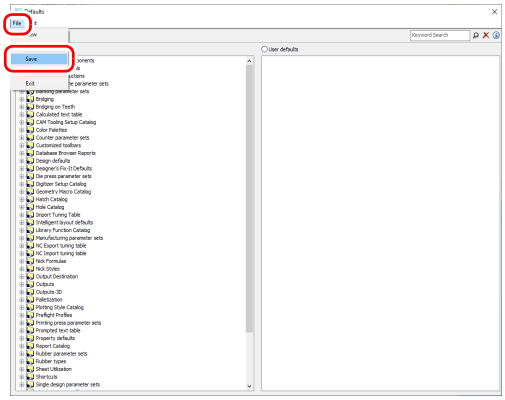


7 Click OK.

- Check that the set value of the selected item has changed and then click OK.



8 **Select [Save] in the [File] menu to save the shared defaults.**



Perform output

This section explains how to configure the output settings for your design data.
In order to output the data, you first need to configure the settings for the output files located in the [Outputs] folder in the shared defaults.

Before Configuring the Output Settings

The preparations differ according to the drivers and output type used for the output process.
Refer to the table below when preparing the media.

When using the CAM drivers	Adding a printer (Generic/Text Only) to your PC	Refer to “Connection Guide” provided separately
	Configuring the NC Export tuning table	P.1-22
When setting the output type to "CAM"	Configuring the CAM tooling setup catalog	P.1-18
Configure regardless of the driver or output type.	Configuring the plotting style catalog	P.1-12

Output Configuration

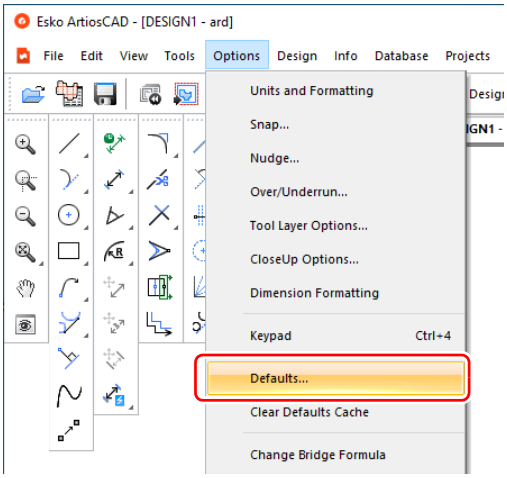
Follow the instructions below to open the output file, and configure the settings in the [Output Settings] window.

Important!

- Configure the settings in the [Output Settings] window in the 5 tabs listed below. The setting items and setting parameters differ according to the drivers you are using and the output type. Be sure to carefully read the instructions below before you configure the settings.
- The tabs in the [Output Settings] window where the settings are to be configured → : View, Position, Processing, Device and Output Type.

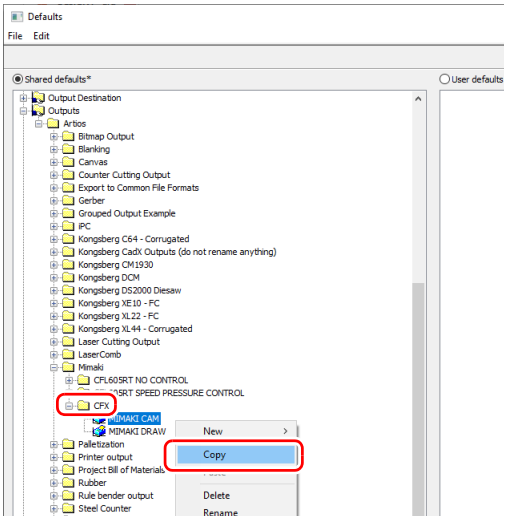
1 Select [Defaults...] in the [Options] menu.

- The [Defaults] window opens.



2 Click the [+] symbol on the left side of the “Outputs” folder in the [Shared defaults].

- Check the folder contents.

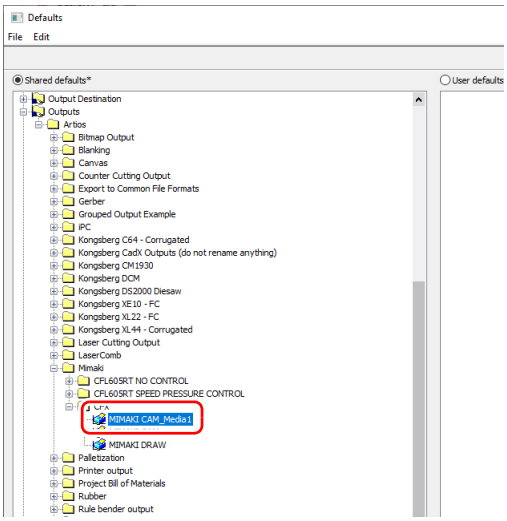


3 Copy the output file you wish to edit.

- Refer to P.1-3 “Managing Defaults” to perform the copy.
- Be sure to copy a CFX output file provided by Mimaki.
- Use half-width alphanumeric characters to name the copied file.

4 Double-click the output file you wish to edit.

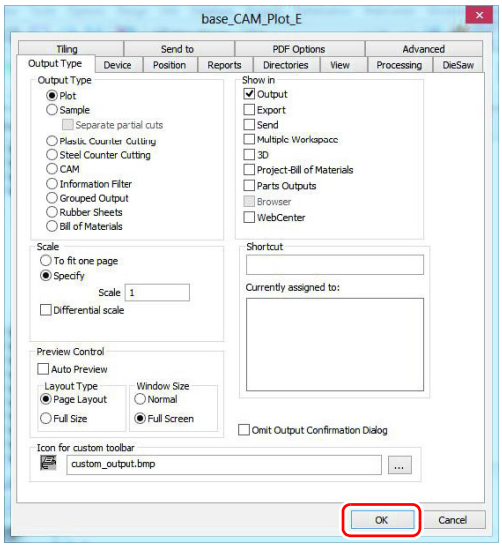
- The settings window for the selected output file appears. Configure the necessary settings according the driver and the output type that you are using.



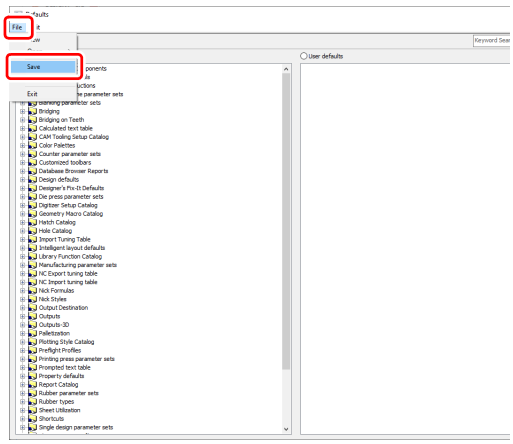
5 Configure the output settings.

- Configure the settings in the following 5 tabs according to the driver and output type that you are using: [Output Type], [Device], [Position], [View] and [Processing].
- For more detailed information regarding the settings included in each of the tabs, refer to the instructions starting from P.1-33.

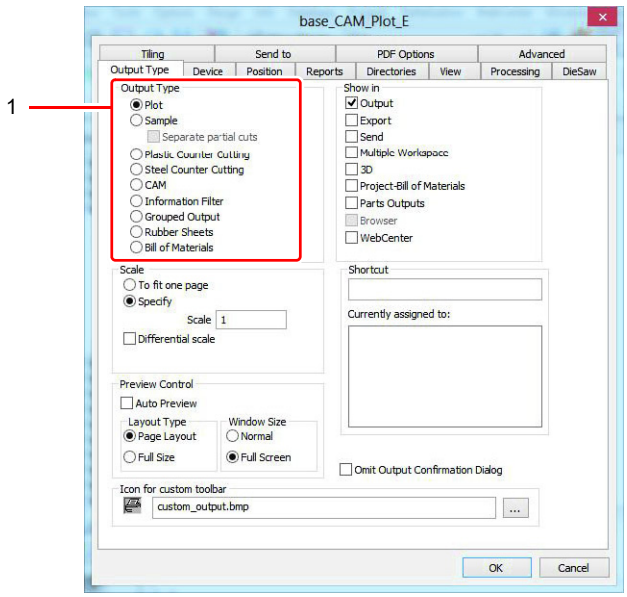
6 When you finish configuring the output settings, click OK.



7 **Select [Save] in the [File] menu, and save the shared defaults.**



● Configure the settings in the [Output Type] tab.

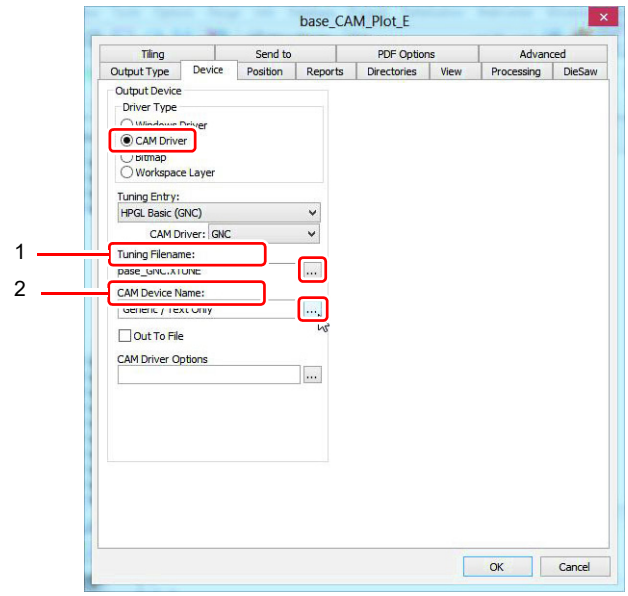


No.	Item	Description
1	Output Type	Select the radio button in front of the output type you wish to use.

● Configure the settings in the [Device] tab.

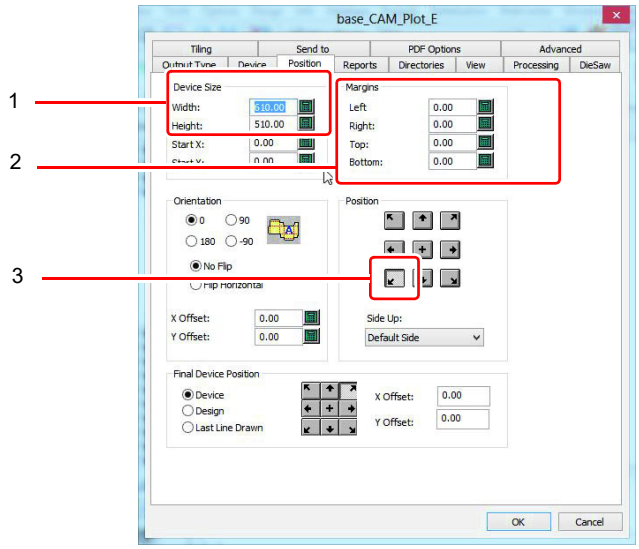
The setting parameters in the [Device] tab depend on the output device type you select at the beginning.

When selecting the CAM driver



No.	Item	Description
1	Tuning table	• Select the tuning table you wish to use. Click [...] to select a device. • Select the NC Export tuning table you set in P.1-22.
2	CAM device	• Select the CAM device (printer) you wish to use. Click [...] to select a device. • Select "Generic/Text Only"

● Configure the settings in the [Position] tab.

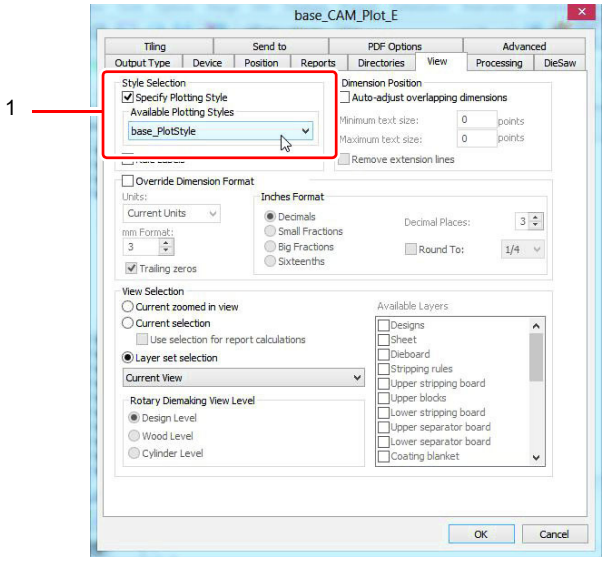


No.	Item	Description
1	Device Size	Enter the cutting area size for the plotter you are using.
2	Margins	By setting the values in these fields, you can define the margins for the image you have designed when you output it.
3	Position	Select the icon on the bottom left.

Important!
- If the size of an image you have designed and its margins exceed the cutting area size, the output results may not meet your expectations.

● Configure the settings in the [View] tab.

If the output type is Plot or Sample, select the plotting style catalog in the [View] tab.

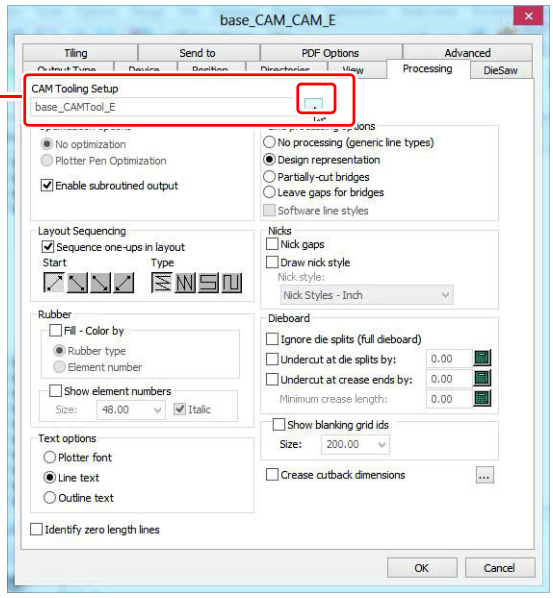


No.	Item	Description
1	Style Selection	**1.** Check “Specify Plotting Style””.. **2.** Click “Available Plotting Styles” and select the plotting style catalog you configured in the section on P.1-12.

- If the size of an image you have designed and its margins exceed the cutting area size, the output results may not meet your expectations.

● Configure the settings in the [Processing] tab.

Output type: With the CAM output type, select the CAM tooling setup catalog in the [Processing] tab.



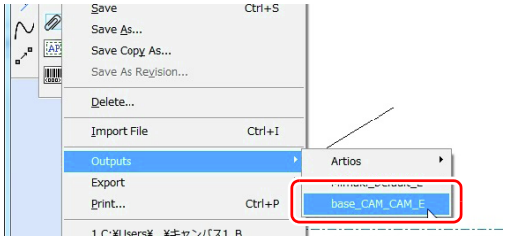
No.	Item	Description
1	CAM Tooling Setup	Select the CAM tooling setup catalog you configured in the section on P.1-18. Click [...] to select a catalog.

Output in ArtiosCAD

Important! • Make sure you have finished configuring the output settings first.

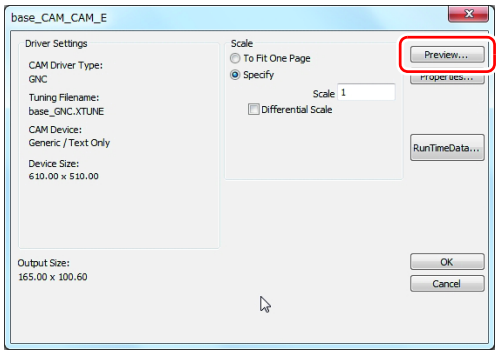
1 Go to [Outputs] in the [File] menu to select an output setting.

- The driver settings window appears.
- The driver settings window differs according to the selected output type.



2 Click Preview.

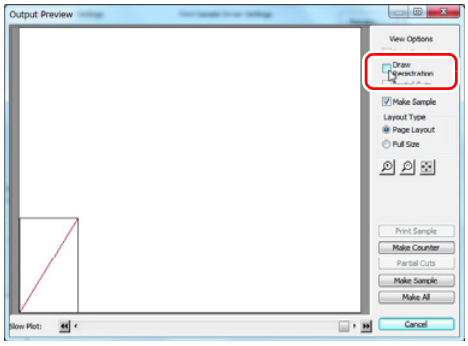
- Preview Click to open the “Output Preview” window.



- In the output preview window, check the line color, line type (line shape), cutting sequence and cutting direction.

Important!

- Output type: If “Sample” is selected, you cannot check the parameters in the output preview window by simply clicking **Preview**.
  Uncheck “Draw Registration” in the output preview window.



3 Check the output preview.

How to check the output preview

- **Checking the color and type (shape) of the lines to be output.**

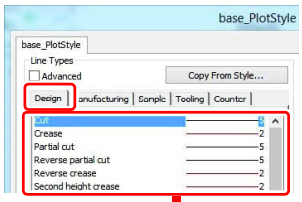
The tabs for checking the line settings in the plotting style catalog differ according to the configured output type.

If the output type is set to “Plot”:Check the settings in the [Design] tab.

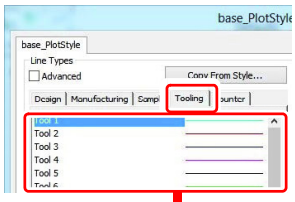
If the output type is set to “CAM”:Check the settings in the [Tooling] tab.

If the output type is set to “Sample”:Check the settings in the [Sample] tab.

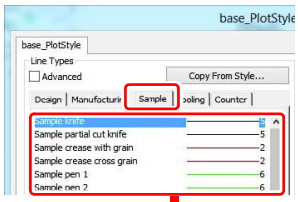
Output type: Plot



Output type: CAM



Output type: Sample



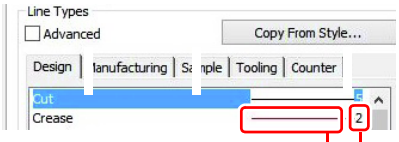
Line type (left side) and line color/shape (right side)

In the preview mode, the line type is shown in the color and shape displayed here.

Important! • If the colors and shapes shown in the preview are not the ones you have chosen, the output settings may not be correct. Check the output settings. (→ P.1-30)

- **Checking the output conditions in the preview window**

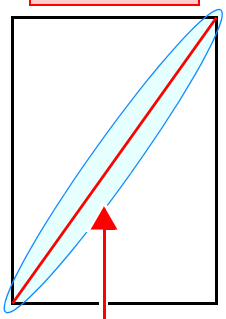
When using the CAM drivers



Preview colors and line type (shape)

Tool number

Preview Window

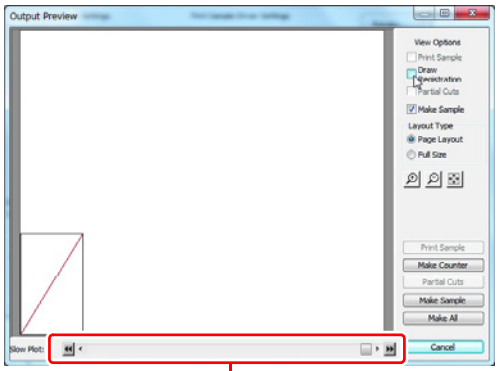


Color: Red
Line type (shape): Straight

You can check the conditions in the plotting style catalog (→ P.1-12).

- **Checking the cutting sequence and cutting direction**

Use the scroll bar at the bottom of the output preview window to check the settings.



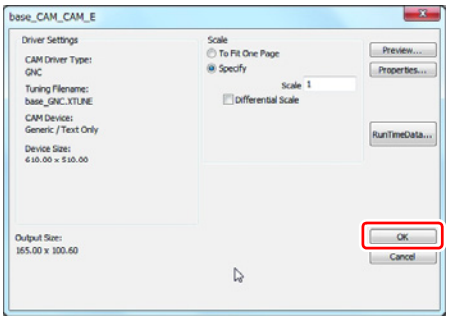
Scroll bar

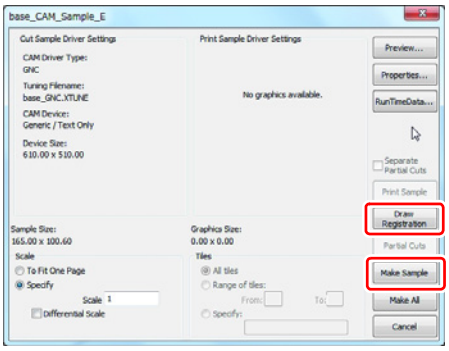
4 After checking the preview, click [Cancel] or [X] to close the preview window.

Important! • Clicking [OK] starts output.

5 To start the output process, click OK if the output type is set to “Plot” or “CAM”, and click Make Sample if the output type is set to “Sample”.

- Click Draw Registration if you wish to create a simple counter plate.
  (For instructions on how to create a simple counter plate, refer to “Creating a Simple Counter Plate” on P.1-54.)





Changing the Output Settings before the Output Process

If you wish to change the output conditions you are currently using by changing the output plotter or media, create several types of output conditions in advance so that you can switch between them in the output process.
This section provides the following 3 patterns as examples illustrating how to switch between the settings.

(1) Changing the cutting conditions for the CAM driver output with the NC tuning table
(2) Configuring the settings in the output process with the plotting style catalog
CAM driver : Changing the tools for the line type
(3) Using the CAM tooling setup catalog to change the output sequence and tools for the line type when the output type is set to CAM with the CAM driver output

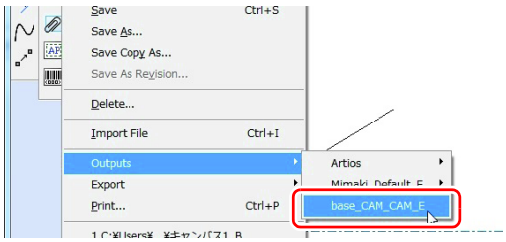
1 Make sure you have configured the output settings.

- P.1-30 Refer to “Output Configuration”

2 Go to [Outputs] in the [File] menu to select the output settings you wish to use for the output process.

- Next, refer to the instructions for the output settings you wish to change.

(1) Changing settings with the NC tuning table
(2) Changing settings with the plotting style catalog
(3) Changing settings with the CAM tooling setup catalog

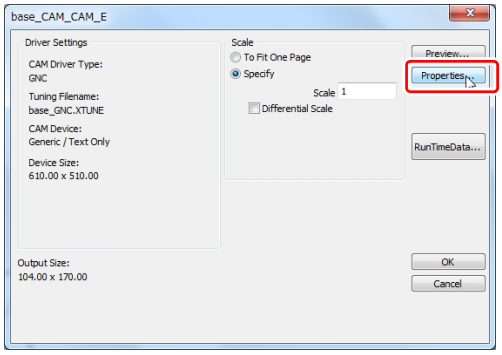


● Changing settings as described in items (1) to (3)

1 Make sure you have configured the following settings.

- NC tuning table settings (→ P.1-22)
- Plotting style catalog settings (→ P.1-12)
- CAM tooling setup catalog settings (→ P.1-18)

2 Click Properties... to check or change the output settings.

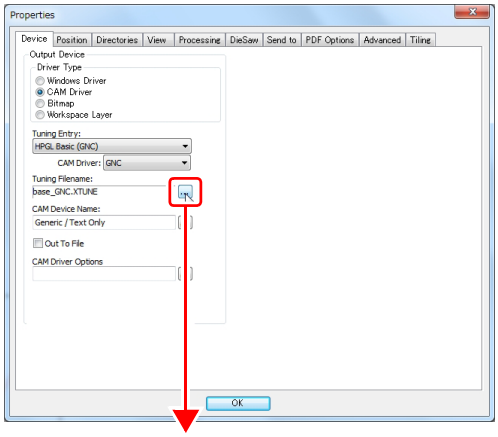


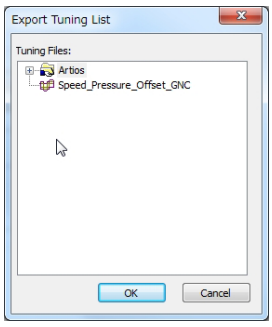
Important!

- The parameters you change here return to their original state when you close the [Outputs] window. We recommend changing the settings that you frequently use in [Options] - [Defaults].
- If you wish to carry out the output process after changing the parameters that cannot be changed immediately before the output process such as the output type, or if you wish to apply frequently used output settings, we recommend referring to “Managing Defaults” on P.1-3 and creating several types of output settings.

(1) Changing the settings with the NC tuning table

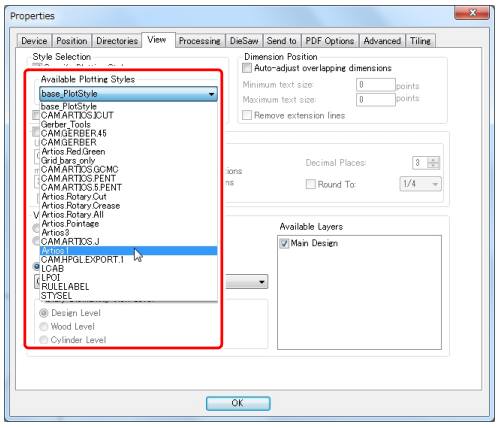
- Open the [Device] tab.
- Click [...] next to the tuning file name to change the tuning file.



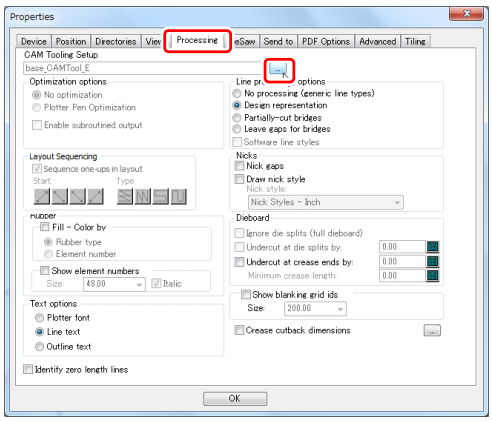


(2) Changing settings with the plotting style catalog

- Open the [View] tab.
- Click one of the available plotting styles and change it.



(3) Changing settings with the CAM tooling setup catalog
- Open the [Processing] tab.
- Click [···] next to “CAM Tooling Setup” to change the settings.



3 **To start the output process, click [OK] if the output type is set to “Plot” or “CAM”, and click [Make Sample] if the output type is set to “Sample”..**

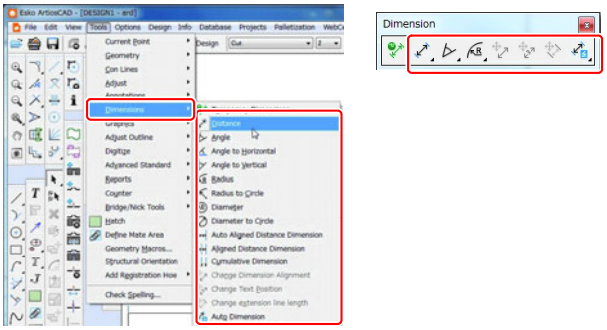
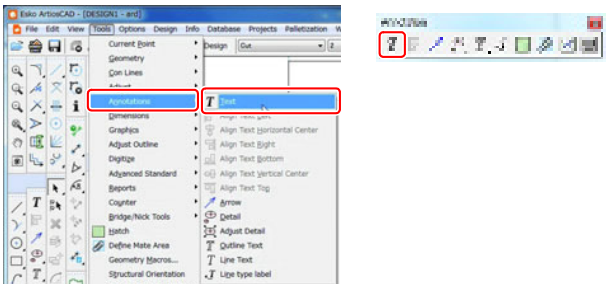
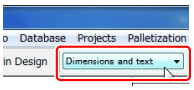
Configuring Special Output Methods

Text Output

With the CAM driver output, you can include the text that you create when designing the product, box dimensions and other information.

● Text types with different available output styles

The text types with various output styles available include “Dimensions”, “Annotations” and “Line type with dimensions and text”.
Follow the steps below to insert the text.

♦ **Dimensions** When designing a product, you can insert the length of one side, the radius (R) or other dimensions. ♦ Select an output style from the items listed inside the red square in the menu that appears if you select [Dimensions] in the [Tools] menu. You can also select an output style from the items inside the red square if you display “Dimensions” in the quick access bar.	
♦ **Annotations** When designing a product, you can include a comment. ♦ You can select an output style for the text that you enter by selecting [Annotations] and then [Text] in the [Tools] menu. You can also select an output style from the items inside the red square if you display “Annotations” in the quick access bar.	
♦ **Line type (dimensions and text)** When you select a line type, you can add its dimensions and comments. ♦ You can select an output style for the text that you enter by selecting “Dimensions and text” in the toolbar.	

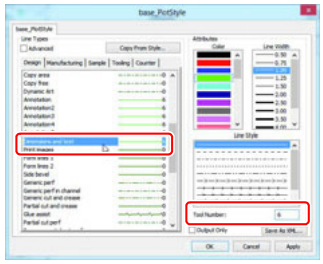
● Setting up the tools for text output

The tool setup method differs according to the configured output type.
Follow the steps below to insert the text.

<table>
<tr><td>

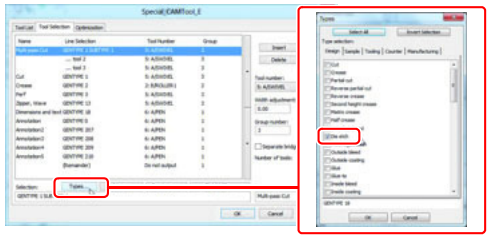
♦ **Output type: Plot**

1. Open the [Design] tab in the plotting style catalog.
2. Select “Dimensions and text” from the tool list to the left.
3. Set the tool number (→ P1-14)

</td><td>  </td></tr>
<tr><td>

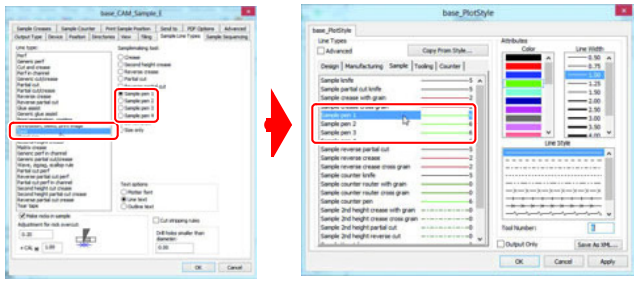
♦ **Output type: CAM**

1. Click [Type] in the CAM tooling setup catalog
2. Select “Die etch” and specify a tool (→ P1-18).

</td><td>  </td></tr>
<tr><td>

♦ **Output type: Sample**

1. Open the [Sample Line Types] tab in the [Outputs] menu.
2. Select “Text” from the line type list to the left.
3. Select any sample pen from 1 to 4 in the “Samplemaking tool” column to the right.
4. Open the [Sample] tab in the plotting style catalog.
5. Specify a tool for the sample pen that you selected in step 2 (→ P1-16).

</td><td>  </td></tr>
<tr><td colspan="2">

♦ **Click [OK] when you finish configuring the settings.**
♦ **If you click the [X] or the [Cancel] button, the settings will be lost.**

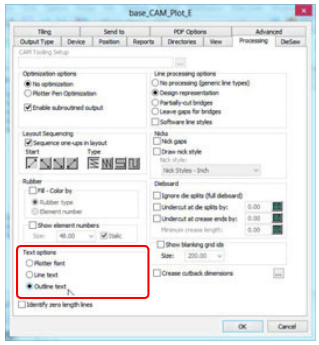
</td></tr>
</table>

● Configuring the output style

The tool setup method differs according to the configured output type.
Follow the steps below to configure the output style.

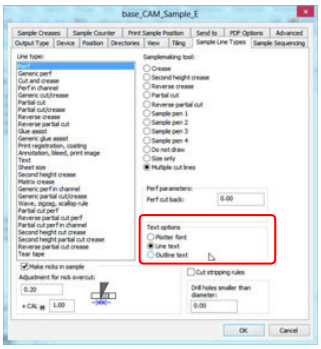
♦ Output type: Plot or CAM

1. Open the [Processing] tab in the [Output Settings] window (→ P1-33).
2. Select an output style in the “Text options” section.



♦ Output type: Sample

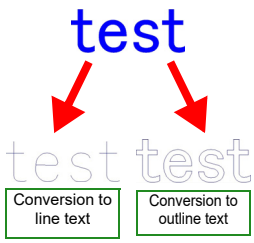
1. Open the [Sample Line Types] tab in the [Outputs] menu.
2. Select an output style in the “Text options” section.



♦ Click [OK] when you finish configuring the settings.
♦ If you click the [X] or the [Cancel] button, the settings will be lost.

The following 3 output styles are available. Select a style after learning about its characteristics.

- **Plotter font**
  If you select this font when you enter text consisting of characters other than the alphanumerical characters, the characters may not be shown correctly. Do not select this option in such cases.
- **Line text**
  Select this option to output text with a single-lined (thin) font.
- **Outline text**
  Select this option to output text in an outlined style. An outlined font will be used for the output.



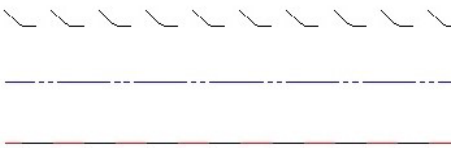
Important!

When converting to outline text or line text, be sure to follow the steps described above.

- You can also find the “Outline text” and “Line text” in “Annotations” in the [Tools] menu. However, if you use those options, the text may not be output correctly. (The same applies to the “Outline” and “Line text” options in the annotation tool menu.)

Special Cutline Output

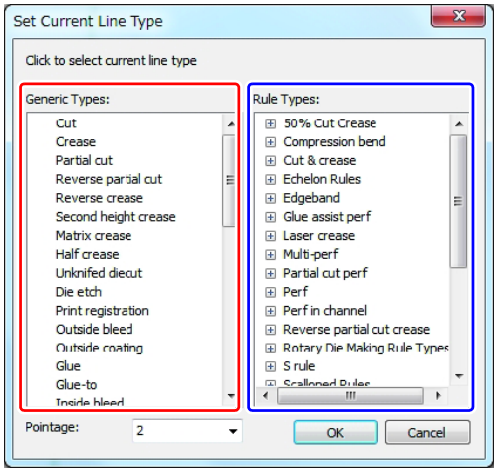
In ArtiosCAD, you can use the special cutlines like the ones shown to the right.
All special cutlines are normally converted to straight lines in the output process.
This section explains how to configure the settings for outputting frequently used line types.



In ArtiosCAD, you can choose between various line types.
The line types are divided into 2 categories: the “Generic Types” and the “Rule Types”. The line types in each of these 2 categories have the following roles.

Generic Types: These are the basic line types in ArtiosCAD. These line types cannot be changed or deleted, and no new line types can be added to this group.

Rule Types : The line shapes in this group can be customized and new line types can be added,



● Special Cutline Output Methods and Characteristics

There are 2 main output methods for the special cutlines: “Configuring the Line Processing Options” (P1-46) and “Configuring the Sample Line Type” (P1-48).
The characteristics of each method are described below.

	Output Type	Description
Line Processing Options	Plot	This option is easy to set up, but the generic line types cannot be output according to their shapes. The line types that can be output include “Cut and crease/Perf” and other types, whereas the line types that cannot be output include “Perf/Generic cut and crease” and other types.
	CAM	This option is easy to set up, but the generic line types and the rule types consisting of two tool types or more cannot be output according to their shapes. The line types that can be output include “Perf” and other types, whereas the line types that cannot be output include “Perf/Generic cut and crease/Cut and crease” and other types.
Sample Line Type	Sample	Although the setup is complicated, this option allows you to output a larger variety of line types as they appear than the line processing option. You can also configure the cut length for the generic cut and crease option or the crease length. The line types that can be output include “Perf/Generic cut and crease/Cut and crease” and other types.

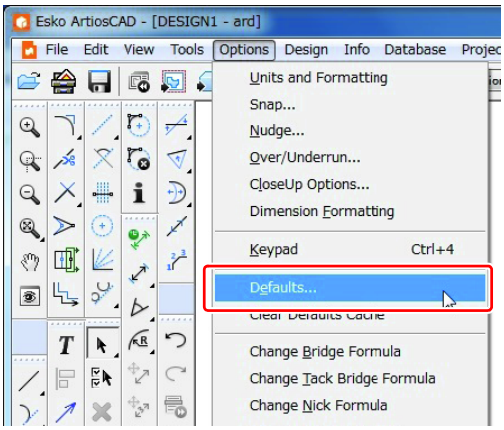
Configuring the Line Processing Options

By configuring the line processing options, you can output the special cutlines according to their shapes.
Output type: These options can be applied when the output type is set to “Plot” or “CAM”.

- Output type: You can output the special cutlines according to their shapes even when the output type is set to “Sample”.
  Configure the settings according to the instructions in “Configuring the Sample Line Type” (P1-48).

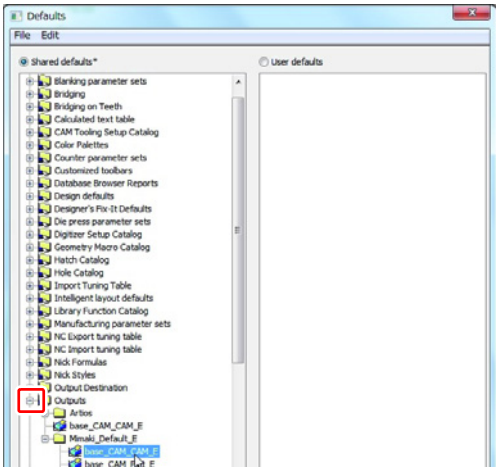
1 Select [Defaults...] in the [Options] menu.

- The [Defaults] window opens.



2 Click the [+] symbol on the left side of the [Outputs] folder in the shared defaults.

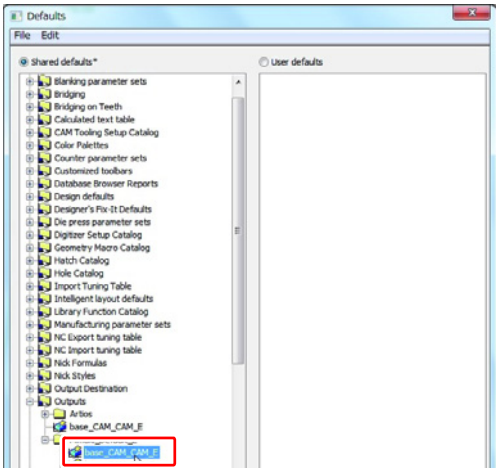
- The contents of the [Outputs] folder are displayed.



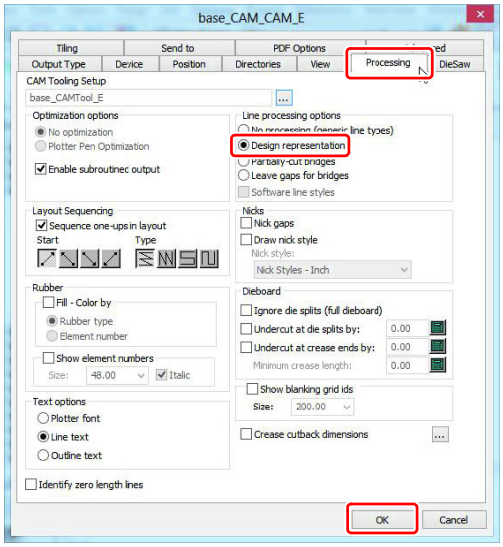
3 Double-click the output folder you wish to edit.

- A window opens. Make sure the output type in the “Output Type” tab is set to “Plot” or “CAM”.

- If the output type is set to “Sample”, the line processing options cannot be configured.
  In that case, configure the settings according to the instructions in “Configuring the Sample Line Type” (P1-48).



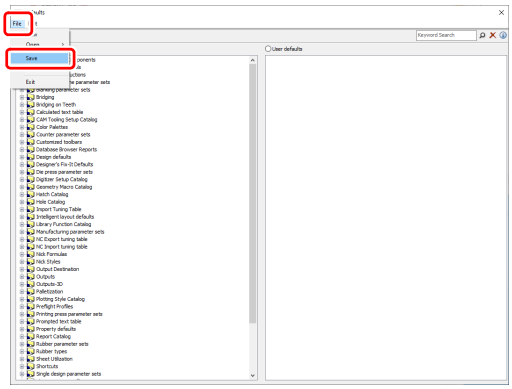
4 **Click the [Processing] tab and select “Design representation” under “Line processing options”.**



5 **Click OK.**

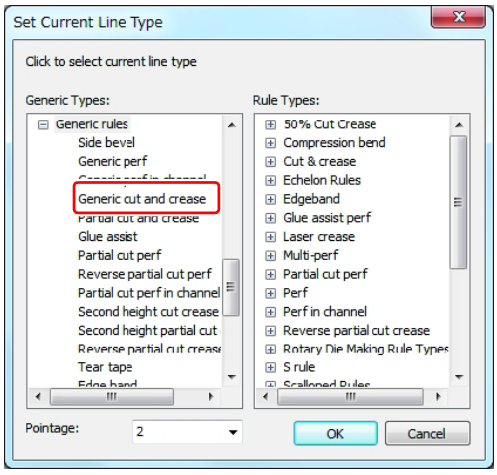
6 **Click [Save] in the [File] menu.**

- The shared defaults are saved.



Configuring the Sample Line Type

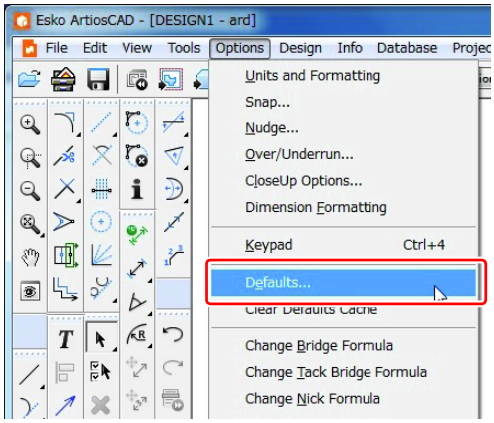
Output type: Configure the sample line type in order to output the special cutlines according to their shapes when the output type is set to “Sample”.
If you configure the sample line type, you can control the output method for each line type in the output process.
This section uses the “Generic cut and crease” option as an example to explain how to configure the sample line type.



> • You can find the “Generic cut and crease” option on the list under “Generic rules” displayed in the “Generic Types” section in the [Set Current Line Type] window.

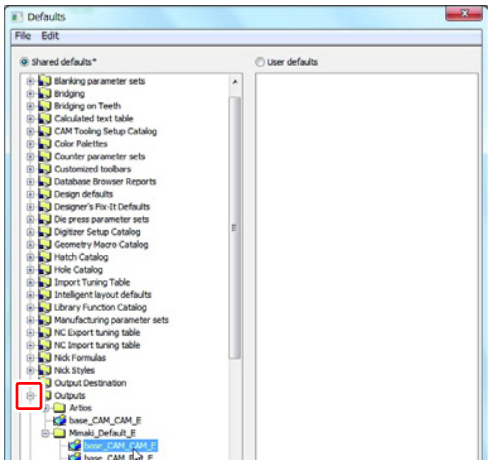
1 Select [Defaults...] in the [Options] menu.

- The [Defaults] window opens.



2 Click the [+] symbol on the left side of the [Outputs] folder in the shared defaults.

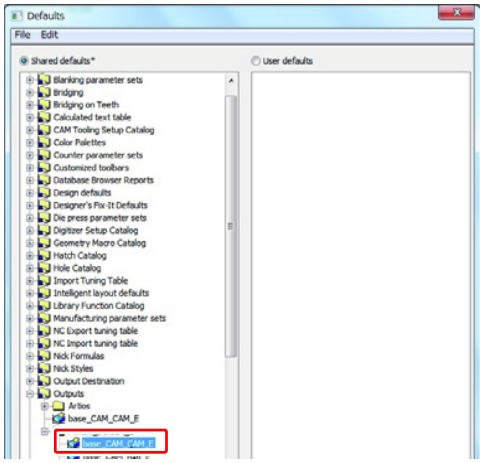
- The contents of the [Outputs] folder are displayed.



3 Double-click the output folder you wish to edit.

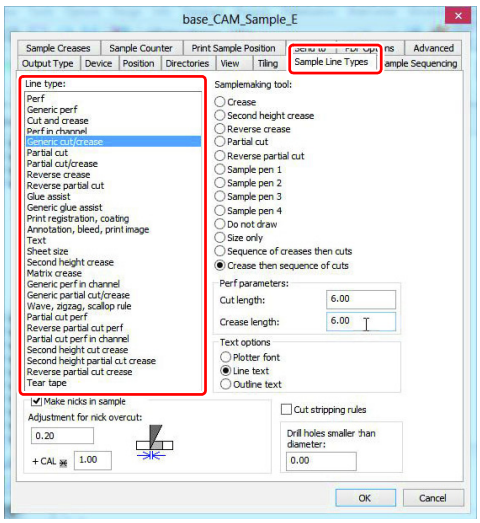
- A window opens. Make sure the output type in the “Output Type” tab is set to “Plot” or “CAM”.

> • If the output type is set to “CAM” or “Plot”, the sample line type cannot be configured.
> In that case, configure the settings according to the instructions in “Configuring the Line Processing Options” (P1-46).



4 Click the [Sample Line Types] tab, and select the line types where you wish to change the settings.

- Select the line types where you wish to change the settings from the list on the left side of the window.
- The names listed on the left side of the window may differ from the names of the line types that you configured when creating the design. Refer to the line type list (P 1 - 64).
- Line type: The “Generic cut and crease” option is assigned to the “Generic cut/crease” option here. Select “Generic cut/crease” under “Line type” in the [Sample Line Type] tab.

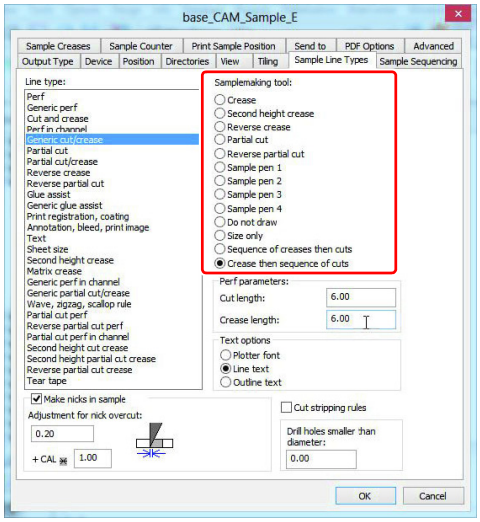


5 Select an output method under “Samplemaking tool”.

- The table below provides a list of the available output methods and information regarding those methods.

Important!

- The tool setting parameters in the plotting style catalog for the line type may change depending on the type of the sample making tools that you configure here.
- The “Tool Setting Parameters in the Plotting Style Catalog” column in the table provides the output configurations. Check these settings before the output process.
- For instructions regarding the configuration of the plotting style catalog, refer to P1-12.



Sample Making Tool List

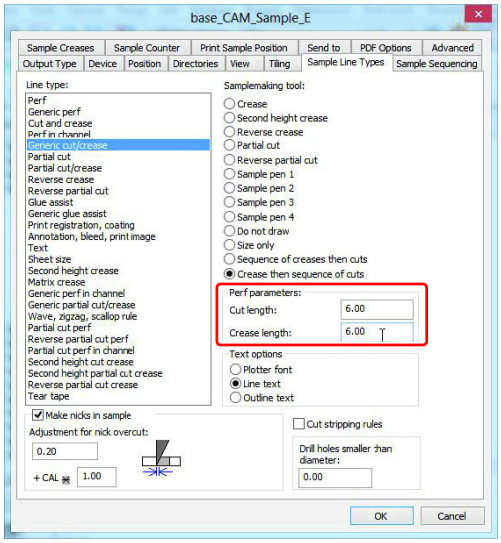
Selected Option	Output Method	Tool Setting Parameters in the Plotting Style Catalog
Crease	All the configured line types are output with the “Crease” option.	Sample crease with grain
Second height crease	All the configured line types are output with the second crease tool.	Sample 2nd height crease with grain
Reverse crease	All the configured line types are output with the “Reverse crease” option.	Sample reverse crease
Partial cut	All the configured line types are output with the “Partial cut” option.	Sample partial cut knife
Reverse partial cut	All the configured line types are output with the “Reverse partial cut” option.	Sample reverse partial cut
Sample pen 1	All the configured line types are output with the tool set to Sample pen 1.	Sample pen 1
Sample pen 2	All the configured line types are output with the tool set to Sample pen 2.	Sample pen 2
Sample pen 3	All the configured line types are output with the tool set to Sample pen 3.	Sample pen 3
Sample pen 4	All the configured line types are output with the tool set to Sample pen 4.	Sample pen 4
Do not draw	The configured line types are not output. (The output data for which the cutting position (coordinates) is not output will be moved.)	————
Size only	The configured line types are not output. (The cutting position (coordinates) for the output data remains unchanged.)	————

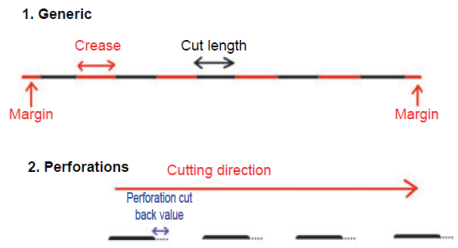
Cut line after multiple creases	With options such as “Generic cut and crease”, the creases are output with cut lines between them after the creases are output in the perforated form.	Crease: Sample crease with grain Cut line: Sample knife
Multiple cut lines after crease	With options such as “Generic cut and crease”, a perforated cut line is output after a single crease.	Crease: Sample crease with grain Cut line: Sample knife
Partial cut line after multiple creases	With options such as “Generic cut and crease”, the creases are output with partial cut lines between them after the creases have been output in the perforated form.	Crease: Sample crease with grain Cut line: Sample partial cut knife
Multiple partial cut lines after crease	With options such as “Generic cut and crease”, a perforated partial cut line is output after a single crease.	Crease: Sample crease with grain Cut line: Sample partial cut knife
Multiple cut lines	The line is cut according to its wavy or perforated shape.	Sample knife
Multiple partial cut lines	A partial cut is made according to the wavy or perforated shape.	Sample partial cut knife
Cut line	Wavy lines or any other shapes are ignored and a straight cut is made.	Sample knife

6 Configure “Perf parameters”.

- Depending on the line type you have selected, you may be able to configure the “Perf parameter” fields. The “Perf parameter” fields that you can configure depend on the line type.
  To learn how the parameters influence the output style for each sample making tool, refer to P1-68 “Detailed settings for special rules (For output type: Sample)”.

1. The perforation parameters displayed with a sequence of cut lines and creases, like the generic cut and crease type
   - Cut length : You can set the cut length.
   - Crease length: You can set the crease length.
   - A generic cut and crease line automatically ends in a crease on both sides.
   - If the entire length of a generic cut and crease line cannot be completely covered by a combination of the lengths of all the creases and cut lines, a crease is added to the remaining length on each side.
2. The perforation parameters displayed with a sequence of cut lines and offsets, like perforations
   - Perf cut back : The cut stops at the specified length from the final cutting point on the perforated line.





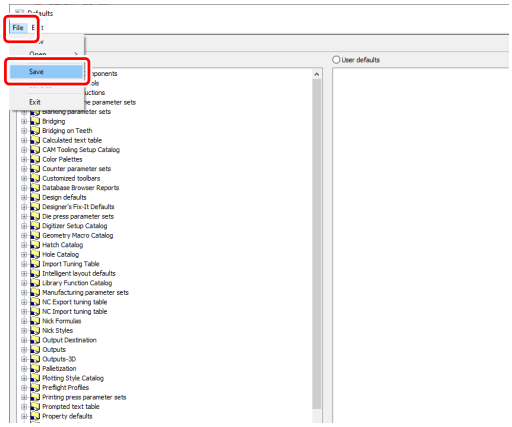
Important!

- The same “Perf cut back” parameter is applied to all of the line types that are available in the [Sample Line Types] tab. Furthermore, as is the case with the “Generic cut/crease” line type, some of the line types that do not allow you to change the “Perf cut back” value under “Perf parameters” are also affected by the “Perf cut back” parameters.
- For more information regarding the line types that are influenced by the “Perf cut back” parameters, refer to List of Line Types (P1-64).

7 Click OK.

8 Click [Save] in the [File] menu.

- The shared defaults are saved.



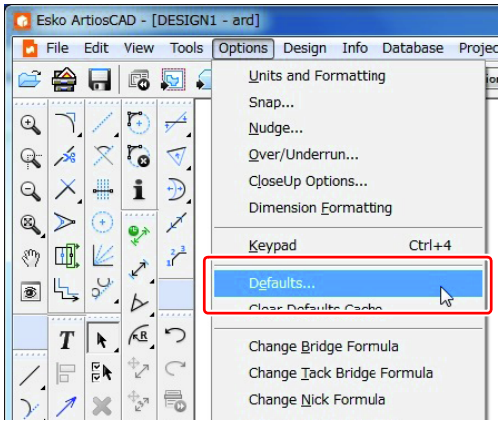
Using Double Pass Creases

You can apply a crease twice to a single line.
Applying a crease twice makes it easier to fold hard media.

> Important!
> - To apply a crease twice, set the output type to “Sample”.
> - The settings in the [Sample Creases] tab affect the following items:
> Generic type creases, rule type creases, reverse creases, creases that are output with the “Samplemaking tool” parameters in the [Sample Creases] tab.

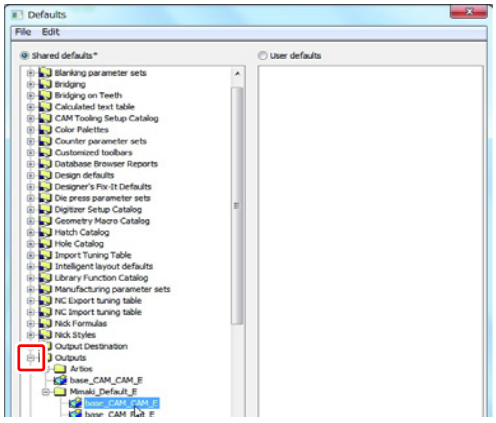
1 Select [Defaults...] in the [Options] menu.

- The [Defaults] window opens.



2 Click the [+] symbol on the left side of the [Outputs] folder in the shared defaults.

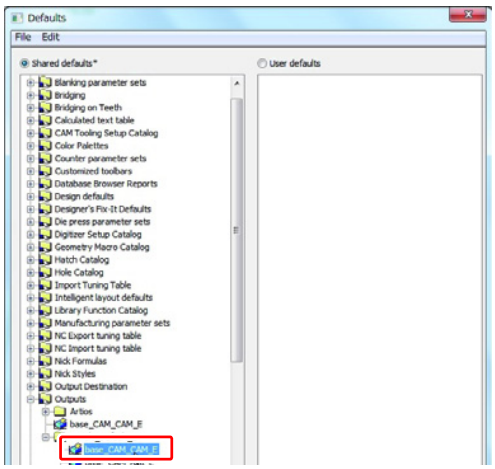
- The contents of the [Outputs] folder are displayed.



3 Double-click the output folder you wish to edit.

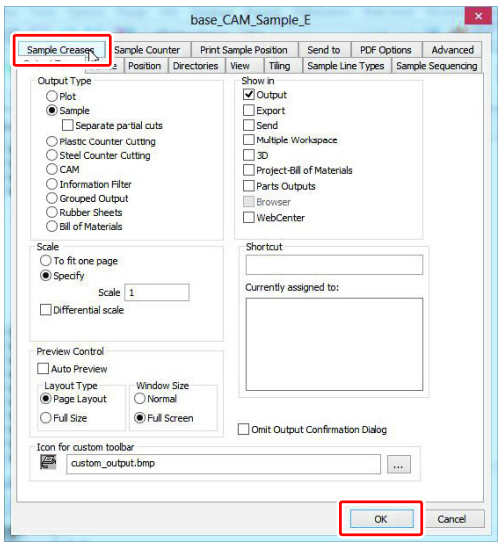
- A window opens. Make sure the output type in the [Output Type] tab is set to “Plot” or “CAM”.

> - If the output type is set to “CAM” or “Plot”, the sample crease cannot be configured.

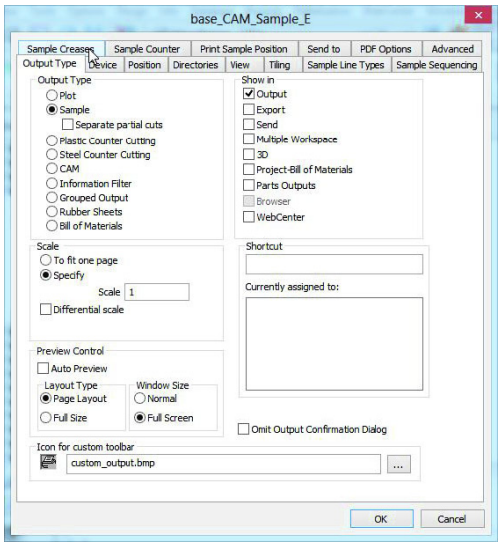


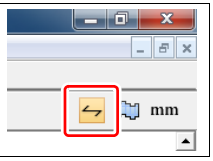
4 **Click the [Sample Creases] tab, and configure the settings.**

- For detailed information about the settings, refer to the table below.



5 **When you finish configuring the settings, click OK.**

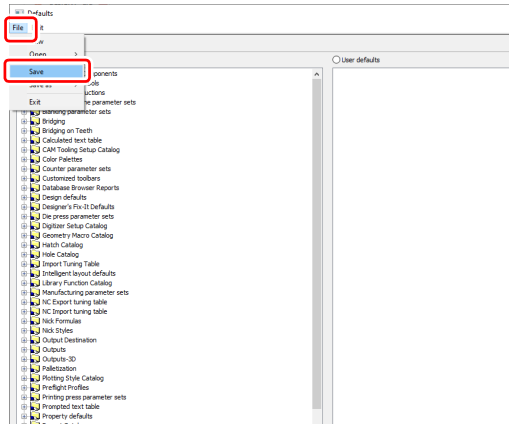


Single pass creasing	This option applies a single crease.
Double pass creasing	This option applies a crease twice.
Double pass with grain crease	Only the creases that run in the grain direction are applied twice, whereas all other creases are applied only once. You can check the (paper) grain direction settings (horizontal or vertical direction of the design) under [Information] in the [Database] menu. ♦ You can change the (paper) grain direction with the “Structure orientation” button. 
Double pass cross grain crease	Only the creases that run in the direction opposite the grain direction are applied twice, whereas all other creases are applied only once.
Crease cut back	The cut stops at the specified length from each end of the crease.
Double pass reverse crease	The line segments set to the [Reverse crease] line type are also applied twice.
Second tool for cross grain	After the creases are applied twice in the grain direction, the creases are then applied twice in the direction opposite the grain direction.
Second tool for thicker creases	The creases with smallest pointage values are output before all the other creases. Important! • This function does not allow you to output the creases in order of the smallest pointage value to the largest pointage value.

Double pass crease offset		This option applies two creases at an interval starting from the central line of the crease. The size of the interval is determined by the total offset value specified in the checkboxes below which are switched ON. ♦ The method for calculating the offset value is described below. Fixed Offset + The value obtained when the board thickness is multiplied by [Multiple of caliper] Multiple of caliper + The value obtained when [Pointage] is deducted from the crease pointage = Offset
	Fixed offset	The offset value is determined by the specified (fixed) value.
	Multiple of caliper	The offset value is determined by the value obtained if the currently set board thickness is multiplied by [Multiple of caliper].
	Allow for pointage	The offset value is determined by the value obtained if [Pointage] is deducted from the crease pointage.
No double lines		If the offset value is set to “0” or less, the creases are not applied twice.

6 **Click [Save] in the [File] menu.**

- The shared defaults are saved.



7 **Carry out the output process using the configured output settings file.**

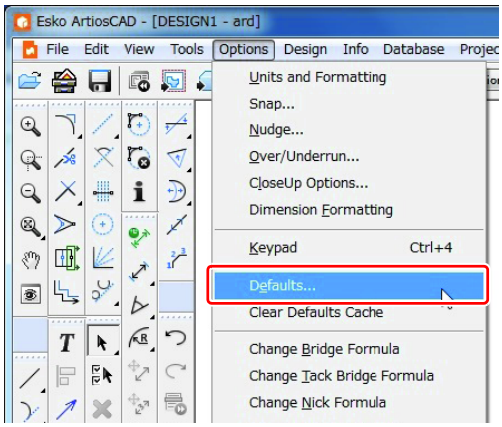
- For instructions regarding the output method, refer to “Output in ArtiosCAD” on P1-35.

Creating a Simple Counter Plate

Create a plate with measurement markings cut out. (In this document, the markings are referred to as “Crease channels”, and a plate containing those markings is referred to as “Simple counter plate”.)
If you measure the product by placing it on a simple counter plate, it is easier to insert the marking gauge.
ArtiosCAD allows you to automatically create simple counter plates starting from their design.

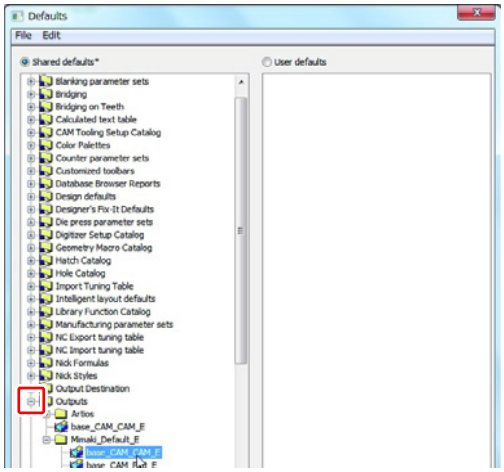
1 **Select [Defaults...] in the [Options] menu.**

- The [Defaults] window opens.



2 Click the [+] symbol on the left side of the [Outputs] folder in the shared defaults.

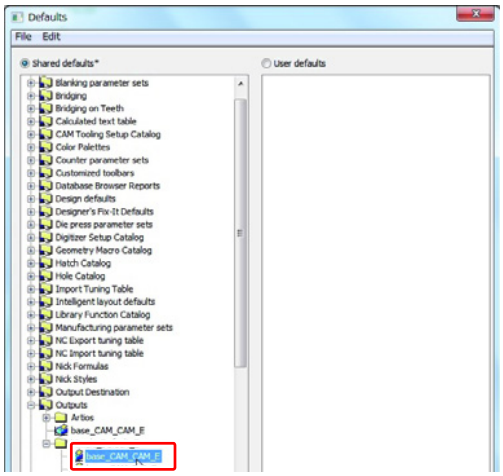
- The contents of the [Outputs] folder are displayed.



3 Double-click the output folder you wish to edit.

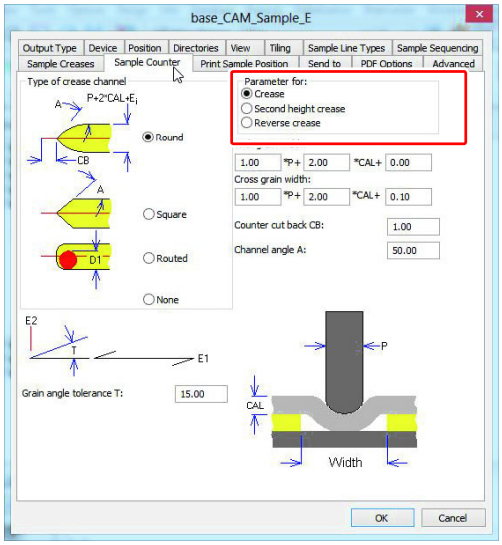
- A window opens. Make sure the output type in the [Output Type] tab is set to “Plot” or “CAM”.

Important!
- If the output type is set to “CAM” or “Plot”, a simple counter plate cannot be created.



4 Click the [Sample Counter] tab, and select the line type for creating the crease channel under “Parameter for”.

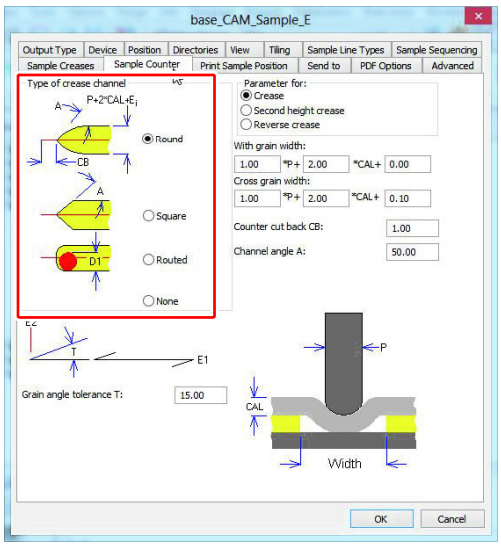
- **If you switch on the [Crease] radio button**
  This option enables the mode for configuring the shape of the crease channel for the line types where the sample line type is “Sample crease with grain”.
- **If you switch on the [Second height crease] radio button**
  This option enables the mode for configuring the shape of the crease channel for the line types where the sample line type is “Sample 2nd height crease with grain”.
- **If you switch on the [Reverse crease] radio button**
  This option enables the mode for configuring the shape of the crease channel for the line types where the sample line type is “Sample reverse”.
- The sample line types corresponding to each option under “Parameter for” are listed in the table below.



Important!
- If you do not wish to create a simple counter plate, select an option under “Parameter for” for the corresponding sample line type, and select [None] under “Type of crease channel” to the left.

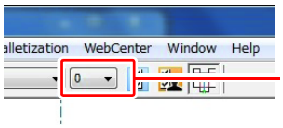
5 Select the shape of the simple counter plate you wish to create under “Type of crease channel”.

- **Round** : This option makes both ends of the simple counter plate rounded according to the channel angle A.
- **Square** : This option makes both ends of the simple counter plate straight according to the channel angle A.
- **Routed** : Select this option if you wish to create a simple counter plate with the milling process.
- **None** : Select this option if you do not wish to create a crease channel.

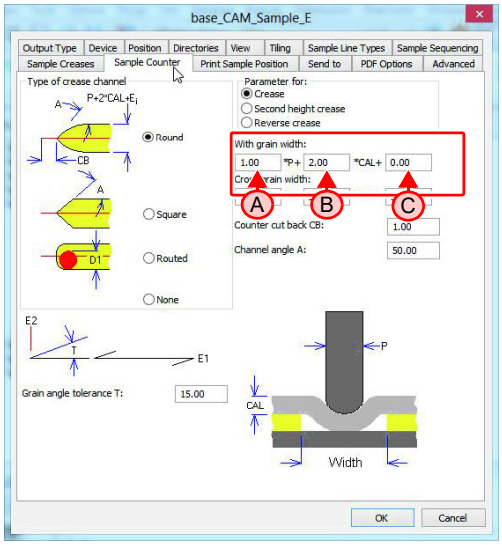


6 Set the crease channel width under “With grain width”.

- Enter the values for calculating the crease channel width into the formula under “With grain width”.
- The channel crease width (Width) is calculated with the following formula.
  Width = A x P + B x CAL + C
  P: The base crease pointage (units: pt)
  CAL: The currently configured board thickness
- If you select a line segment, you can check the value set for “P”, the base crease pointage, in the top part of the window. (You can also check that value by right-clicking the line segment and selecting [Properties].)



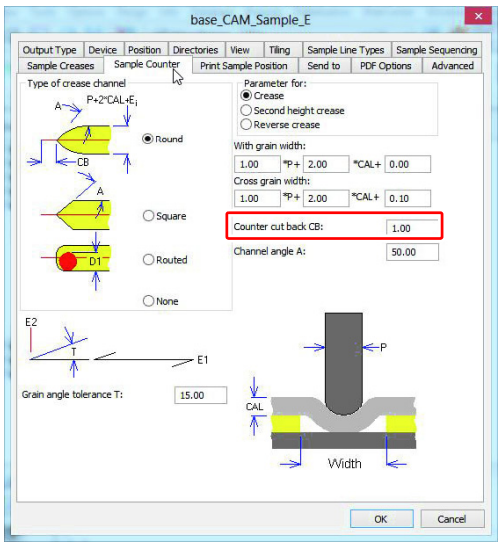
Allow for pointage



> **Important!**
> - Convert the units used for “P”, the base crease pointage, to “in” or “mm”, and calculate the value.

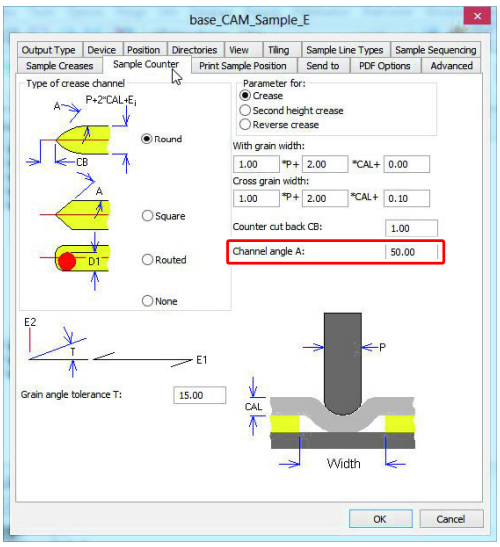
7 Set the counter cut back value.

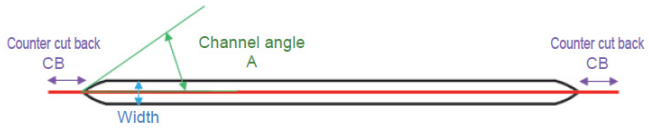
- If you configure the “Counter cut back CB” value, a crease channel is created on both sides of the crease at the configured distance.



8 Configure other settings.

- If you set the crease channel type to “Round” or “Square”, the crease channel is created at the angle set under “Channel angle A”. (Refer to the diagram below.)

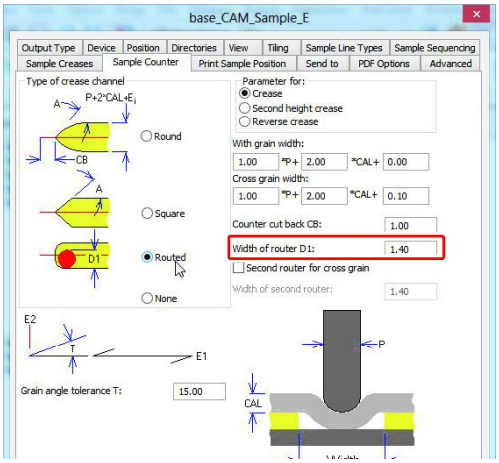




Design crease

The simple counter plate to be cre-

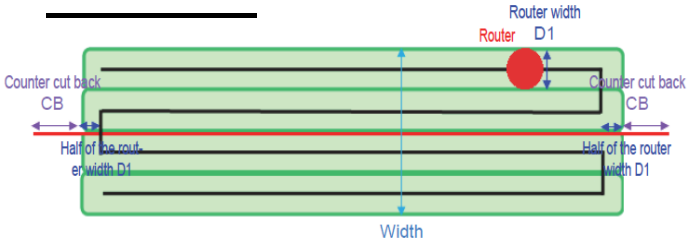
- If you select “Routed” as the simple counter plate type, enter the width of the router you are using in the “Width of router D1” field. The central trajectory of the router is calculated with this value and the simple counter plate width (Width).



Design crease

The actual parts to be removed

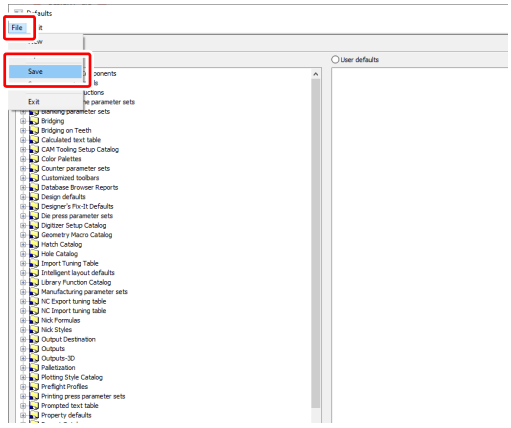
The line to be created



9 When you finish configuring the settings, click OK.

10 Click [Save] in the [File] menu.

- The shared defaults are saved.

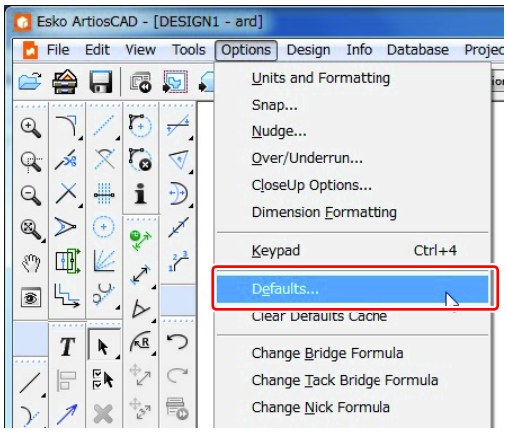


Output Adjustment in the [Sample Sequencing] Tab

Output type: If the output type is set to “Sample”, you can configure the settings in the “Sample Sequencing” tab to process the cut lines or creases automatically according to their intended use.

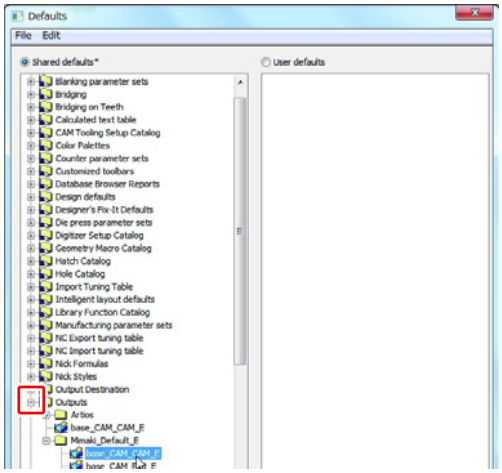
1 Select [Defaults...] in the [Options] menu.

- The [Defaults] window opens.



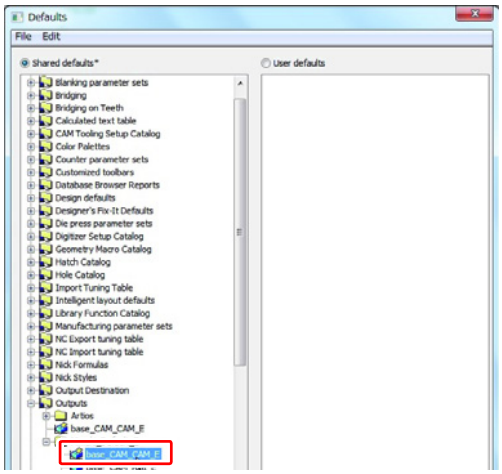
2 Click the [+] symbol on the left side of the [Outputs] folder in the shared defaults.

- The contents of the [Outputs] folder are displayed.



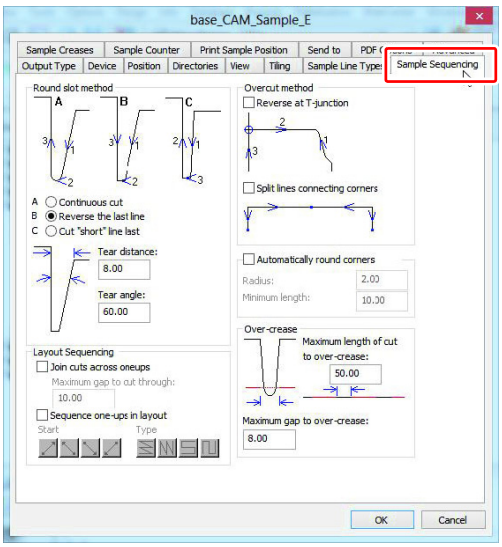
3 Double-click the output folder you wish to edit.

- A window opens. Make sure the output type in the [Output Type] tab is set to “Plot” or “CAM”.



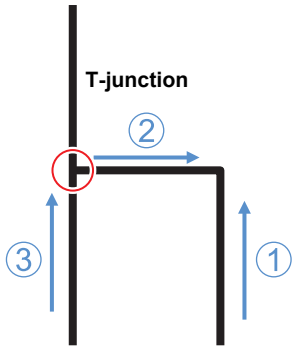
> **Important!**
> - If the output type is set to “CAM” or “Plot”, a simple counter plate cannot be created.

4 Select the [Sample Sequencing] tab.

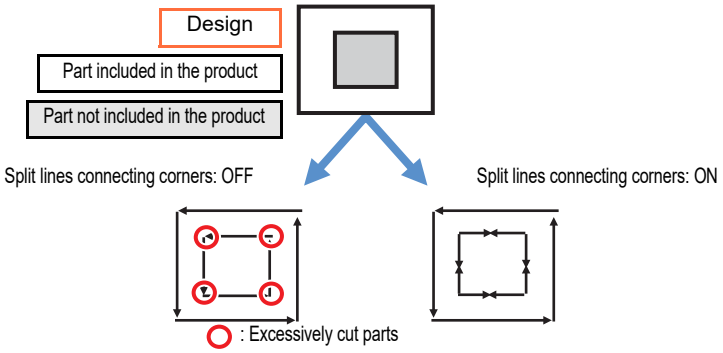


5 Select an option under “Overcut method”.

- By selecting an overcut method, you can optimize the cutting direction in order to prevent excessive cutting of the product.
- **Reverse at T-junction:**
  If you turn this option on, the part that connects the T-junction is detected automatically, and the cutting direction is changed according to the drawing.



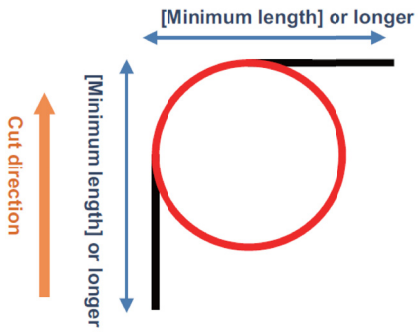
- **Split lines connecting corners:**
  If you turn this option on, the device automatically distinguishes between the “Part included in the product” and the “Part not included in the product”, and optimizes the cutting direction to prevent excessive cutting of the product.



Important! • This parameter cannot be used together with “Automatically round corners”.

6 Configure the “Automatically round corners” settings

- If you turn “Automatically round corners” on, each corner is automatically rounded to prevent excessive cutting.
- **Radius** : The corners are rounded at the radius set here.
- **Minimum length**:If both segment lines of a corner are longer than the [Minimum length], the corner is rounded.



Important!
- Be sure to set enough “Minimum length”. If you are using “mm” as the unit, set the value to more than 0.5 mm. Failing to do so may result in an incorrect round shape of the corner.

7 Configure the “Over-crease” settings.

- The “Over-crease” settings allow you to decrease the unnecessary pen-up time of the crease roller and optimize the output process to make it more efficient.
- **Maximum gap to over-crease:**
  If the gap between the creases is equal to or smaller than the value set under [Maximum gap to over-crease] when there are multiple creases on a single straight line as shown in the diagram, the crease is output in a single line.

Important!
- This parameter cannot be used together with “Split lines connecting corners”.
- Be sure to set enough length. If you are using “mm” as the unit, set the value to more than 0.5 mm. Failing to do so may result in inadequate optimization of the crease.

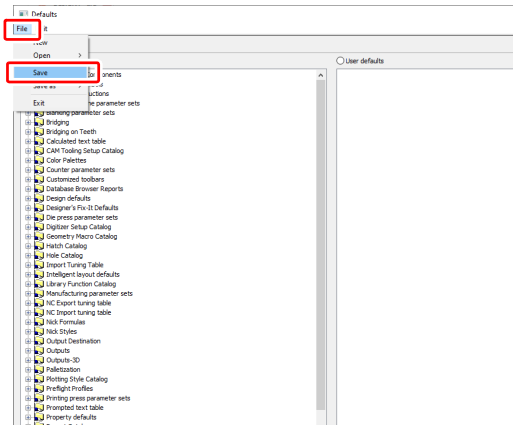
- **Maximum length of cut to over-crease:**
  If the length of the cut lines inserted between the creases is equal to or smaller than the value set under [Maximum length of cut to over-crease] when the cut lines and creases are interconnected as shown in the diagram, the creases are output in a single line.

Important!
- The “Maximum gap to over-crease” may be mistakenly recognized as “Maximum length of cut to over-crease” and vice versa. Set the same value for both parameters.

8 When you finish configuring the settings, click OK.

9 Click [Save] in the [File] menu.

- The shared defaults are saved.



Appendix

Tips for Effectively Using CAM Tooling Setup Catalogs

● Performing Repetitive Cutting

You can specify the [Number of tools] for the line type. You can perform the set amount of cuts by setting the number of tools. (Repetitive cutting)
Use this setting if you want to apply creases twice (overlay).

- Use the [Sample crease] setting if you want to apply a second crease that is offset from the center of the first crease.
(→ P.1-52)

1 Specify the line types as shown below in the CAM tooling setup catalog.

- Specify the settings shown in the table on the right if you want to apply creases twice.

Line Type	Tool	Group
Crease	2	1
Tool 2	2	1

- Set the number of tools to “2” if you want to apply creases twice.
- You can specify a maximum number of eight tools.

● If you want to change the output conditions during repetitive cutting

You can change the output conditions of the same tool by assigning the same tool to a different pen number by using the plotter.

An example of how to change settings if you want to output by applying a second crease with greater pressure than the first crease is shown below.

1 Use [Pen No. Assignment] of the plotter to assign a different pen number to the same tool.

- Specify the settings shown in the table on the right for [Pen No. Assignment] of the plotter.

Tool number	Tool
2	Roller
4	Roller

2 Use the [NC Export tuning table] to set different output conditions to the assigned pen number.
(→ P.1-22)

- Specify the settings shown in the table on the right for an [NC Export tuning table] of ArtiosCAD.

Tool number	Speed	Pressure
2	10	1000
4	10	1500

3 Specify the tool set with different output conditions by using the [CAM tooling setup catalog].
(→ P.1-18)

- Specify the settings shown in the table on the right for a [CAM Tooling Setup Catalog] of ArtiosCAD.

Line Type	Tool	Group
Crease	2	1
Tool 2	4	1

● If you want to output a part of the data (same line type) at the end.

You can divide the same line type and specify the separate parts (segments) by specifying subtypes to the line type. Use this function if you want to change the cutting sequence and number of cuts even within the same line type by using a CAM tooling setup catalog.

- You can use CAM tooling setup catalogs to control the tool and output sequence for each subtype.
- You can set and check subtypes when creating a design.

Important!
- This setting can only be specified when using CAM output.

1 Set [Subtype] for line segments by using design.

- If you frequently use [Subtype] settings, it is useful to register special rule lines as line types whose subtype has already been changed.

2 In design, double-click the line segment to display the properties and check the [Subtype] of the line segment.

3 Newly register the line type specified by the [Subtype] in a CAM tooling setup catalog.

- Click on [Subtype] to select the subtype specified in design.
  (→ P.1-18 “CAM Tooling Setup Catalog”)

Important!
- If performing output by using a CAM tooling setup catalog and the same line type is registered, the tool positioned at the top of the [Tool Selection] tab has priority as the tool used.
  If you want to perform output using the line type specified by the [Subtype], move the previously registered line type so that it is under the line type specified by the [Subtype].

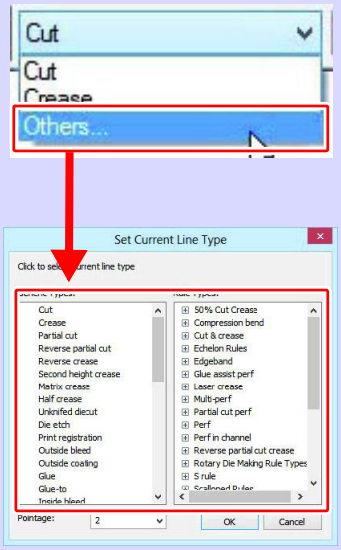
- Specify the settings shown in the table on the right if you want to output the cut line specified by subtype 2 at the end.

Line Type	Subtype	Tool	Group
Cut	2	5	10
Cut	—	5	1

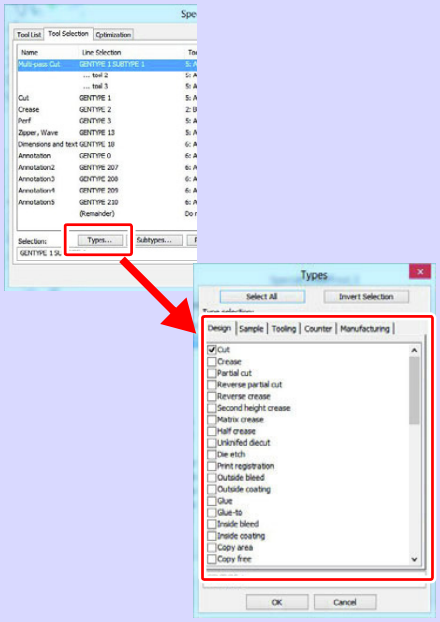
List of Line Types

In ArtiosCAD, the same line type might have different names depending on the location where specified.
The names of commonly used line types shown below are grouped for each location where specified.
You cannot assign any of the [Line type(s)] of the [Sample Line Types] tab to the line types written with red letters in the table below.
Accordingly, the line types selected by using the [Sample] tab of the plotting style catalog are fixed.

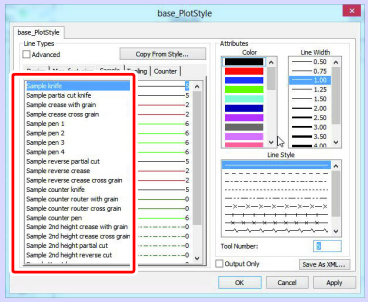
Line type selected from the [Drop-down list box] at the top of the screen



[Option] menu - [Defaults] - [CAM Tooling Setup Catalog]



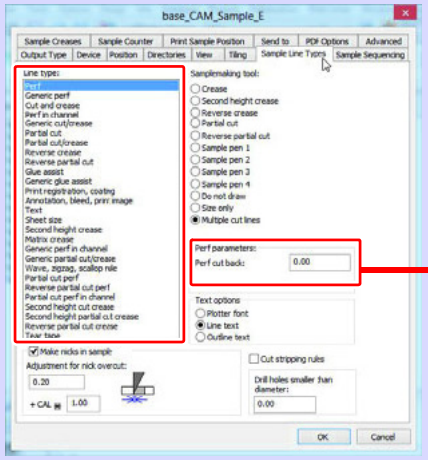
[Option] menu - [Defaults] - [Plotting Style Catalog]



		Names of line types that can be selected from the top of the ArtiosCAD screen.	CAM tool setup catalog	Plotting style catalog	
			[Tool Selection]-[Type]	[Design] tab	[Sample] tab
Generic type		Cut	Cut	Cut	Sample knife
		Crease	Crease	Crease	Sample crease (Paper grain direction)
		Outside bleed	Outside bleed	Outside bleed	— *1
		Annotation	Annotation	Annotation	- *1
		Annotation 2	Annotation 2	Annotation 2	- *1
		Annotation 3	Annotation 3	Annotation 3	- *1
		Annotation 4	Annotation 4	Annotation 4	- *1
		Annotation 5	Annotation 5	Annotation 5	- *1
		Dimensions and text	Die etch	Dimensions and text	- *1
	Generic rule	Generic perforation	Generic perforation	Generic perforation	- *1
		Generic cut and crease	Generic cut and crease	Generic cut and crease	- *1
Rule type crease		Cut and crease	Generic cut and crease	Generic cut and crease	- *1
		50% cut crease	Partial cut and crease	Partial cut and crease	- *1
		Perforation	Generic perforation	Generic perforation	- *1
		Zipper	Generic sample rule	Generic sample rule	Sample knife
		wave	Generic sample rule	Generic sample rule	- *1

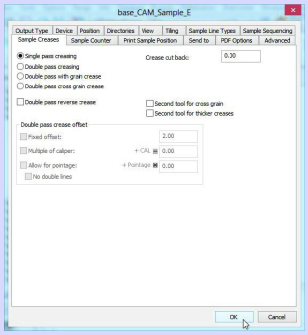
*1. The line styles on the [Sample] tab of the plotting style catalog vary depending on the settings selected by using the [Samplemaking tool] of the [Sample Line Types] tab.

[Option] menu - [Defaults] - [Outputs] - [Sample Line Types] tab
(Tab displayed when sample output is used.)



Line type: Displayed when perforation is selected.

[Option] menu - [Defaults] - [Outputs] - [Sample Creases] tab

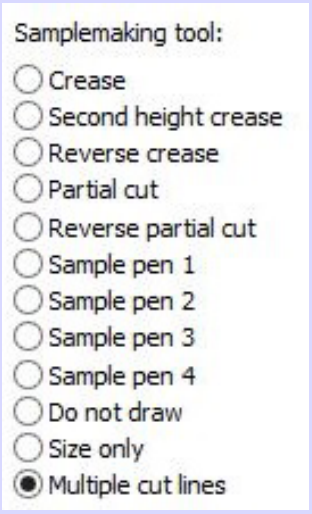


Output		
Sample line type		Sample crease
Line type of the sample line types tab	Affected by perforation cut back	Affected by sample crease
-	-	-
-	-	○
Annotation, bleed and print image	-	-
	-	-
	-	-
	-	-
	-	-
	-	-
Text	-	-
Generic notch	○	-
Generic cut/crease	Cut line only ○	Crease only ○
Cut and crease	Cut line only ○	Crease only ○
Partial cut/Crease	Partial cut line only ○	Crease only ○
Perforation	○	-
-	-	-
Wave, zig-zag pattern, and scallop pattern	○	-

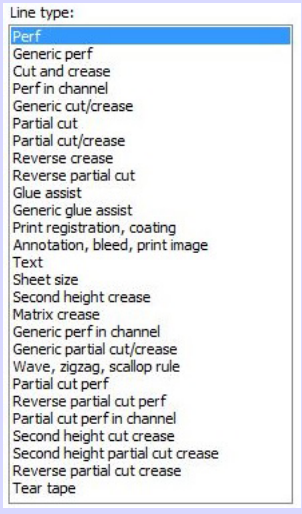
Table: Handled as the locations indicated in the red outline in the Table: Sample Making Tool List.

Sample Making Tool List

[Option] menu - [Defaults] - [Outputs] - [Sample Line Types] tab



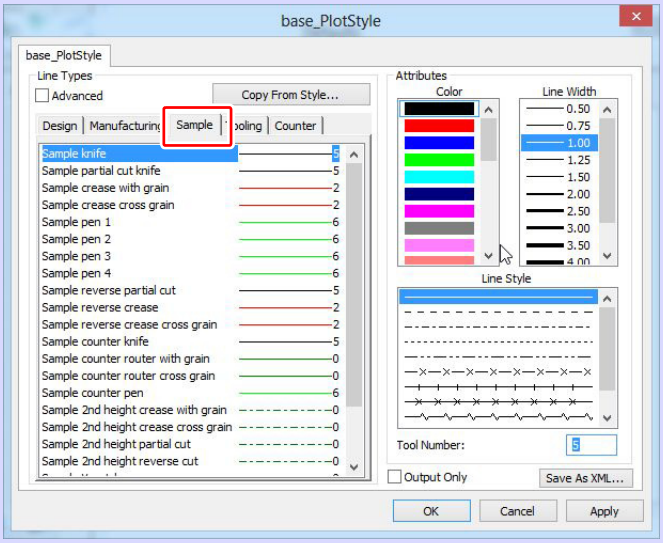
[Option] menu - [Defaults] - [Outputs] - [Sample Line Types] tab



Sample Making Tools	Sample line types that can be specified
Crease	All
Second height crease	
Reverse crease	
Partial cut	
Reverse partial cut	
Pen 1	
Pen 2	
Pen 3	
Pen 4	
No output	
Size only	
Cut line after multiple creases	“Generic cut/Crease” “Cut and crease”
Multiple cuts after creasing	
Multiple cut lines	“Generic notch” “Perforation” “Wave, zig-zag pattern, and scallop pattern”
Cut line	“Wave, zig-zag pattern, and scallop pattern”

Table: Handled as the locations indicated in the red outline in the Table: List of Line Types.

[Option] menu - [Defaults] - [Plotting Style Catalog] - [Sample] tab



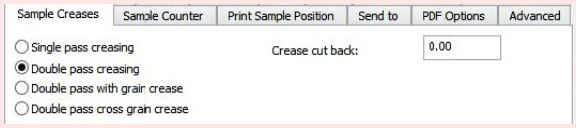
Output method	Name of tool setting item of the plotting style catalog
All the configured line types are output with the “Crease” option.	Sample crease with grain
All the configured line types are output with the second crease tool.	Sample 2nd height crease with grain
All the configured line types are output with the “Reverse crease” option.	Sample reverse crease
All the configured line types are output with the “Partial cut” option.	Sample partial cut knife
All the configured line types are output with the “Reverse partial cut” option.	Sample reverse partial cut
All the configured line types are output with the tool set to Sample pen 1.	Sample pen 1
All the configured line types are output with the tool set to Sample pen 2.	Sample pen 2
All the configured line types are output with the tool set to Sample pen 3.	Sample pen 3
All the configured line types are output with the tool set to Sample pen 4.	Sample pen 4
The configured line types are not output. (The output data for which the cutting position (coordinates) is not output will be moved.)	
The configured line types are not output. (The cutting position (coordinates) for the output data remains unchanged.)	
With options such as “Generic cut and crease”, the creases are output with cut lines between them after the creases are output in the perforated form.	Crease: Sample crease with grain Cut line: Sample knife
With options such as “Generic cut and crease”, a perforated cut line is output after one crease.	Crease: Sample crease with grain Cut line: Sample knife
The line is cut according to the wavy or perforated shape.	Sample knife
Wavy lines or any other shapes are ignored and a straight cut is made.	Sample knife

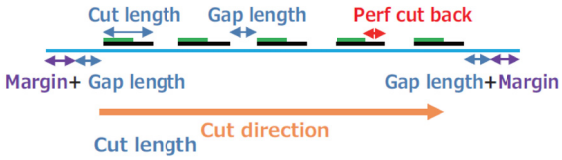
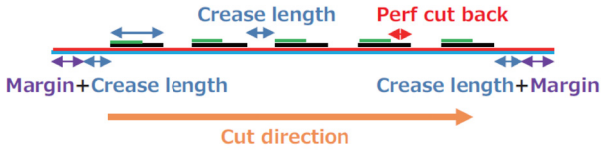
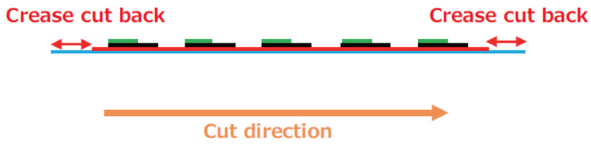
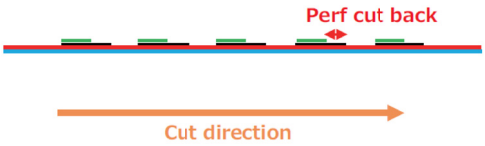
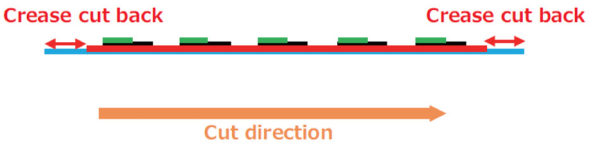
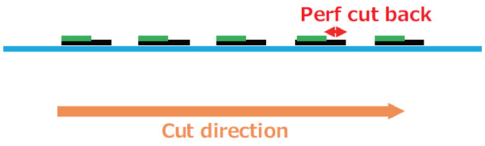
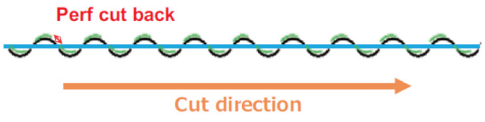
Detailed settings for special rules (For output type: Sample)

ArtiosCAD line type	[Sample Line Types] tab		
	Line type	Sample Making Tools	Parameters
Generic perforation	Generic notch	Multiple cut lines	Cut length Gap width (Perforation cut back)
Generic cut and crease	Generic cut/crease	Cut line after multiple creases Multiple cuts after creasing	Cut length Crease length (Perforation cut back)
Cut and crease	Cut and crease	Cut line after multiple creases Multiple cuts after creasing	Perforation cut back
Perforation	Perforation	Multiple cut lines	Perforation cut back
Wave	Wave, zig-zag pattern, and scal-lop pattern	Multiple cut lines	(Perforation cut back)

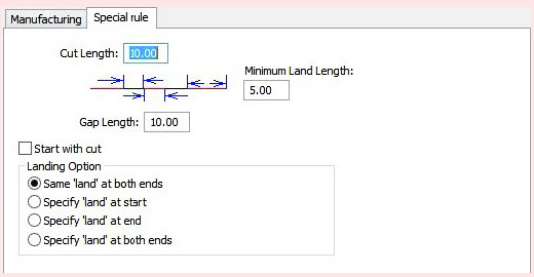
Line segment length in design
Cut line (no perforation cut back)
Cut line (with perforation cut back)
Crease

[Defaults] - [Outputs] - [Sample Creases] tab
• Tab displayed when sample output is used.



Output style	If the crease cut back setting is 0.05 mm or more
	
 * The creases on both sides are automatically reduced to 0.05 mm.	
 * The creases on both sides are automatically reduced to 0.05 mm.	
	
	

[Defaults]-[Special rule]



AI
HK
SW : 14.0.1