ArtiosCAD Designer Solution

Quick Reference Guide

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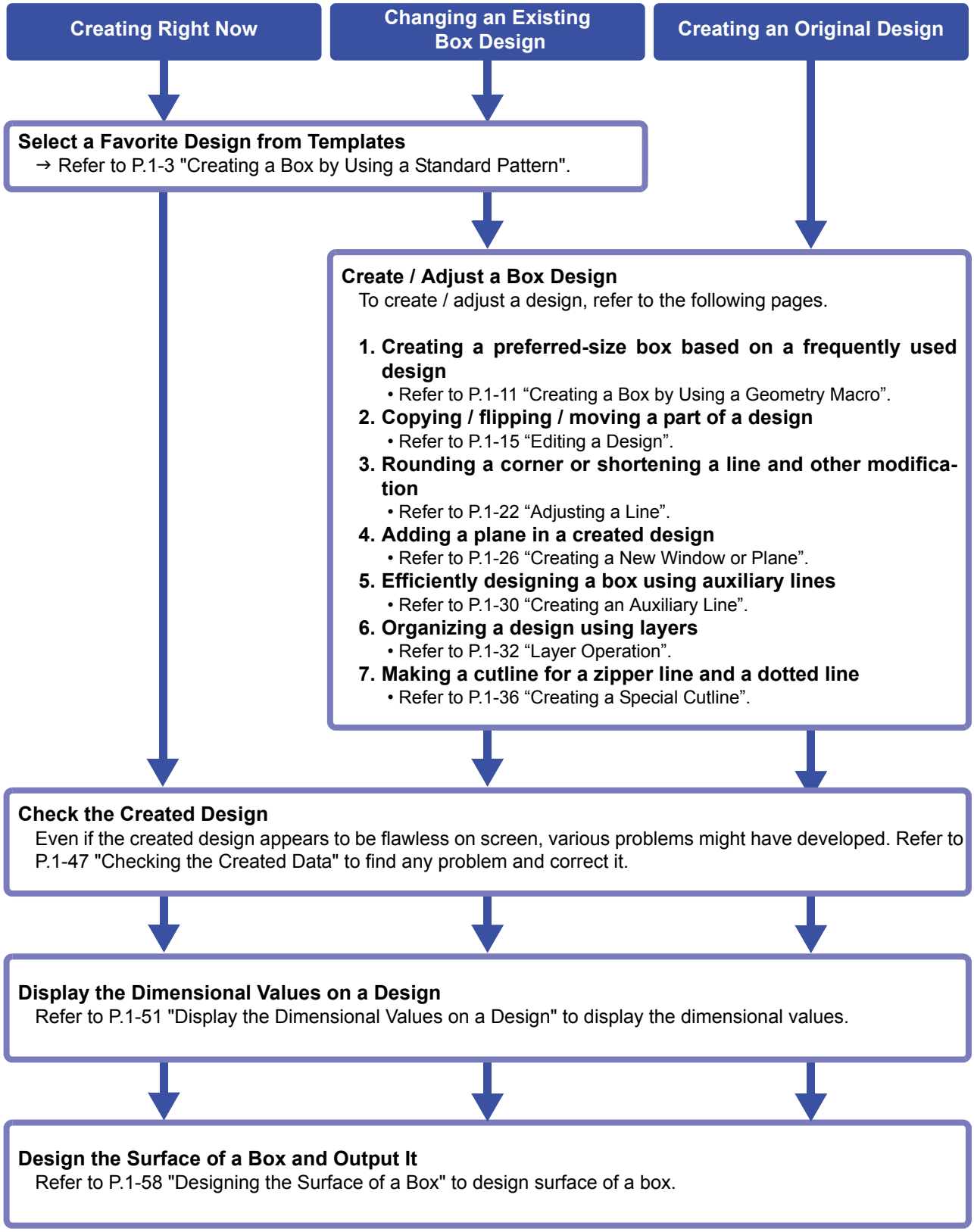
Chapter 1
Drafting

This section describes the procedure for the drafting.

The Flow of Creating a Box

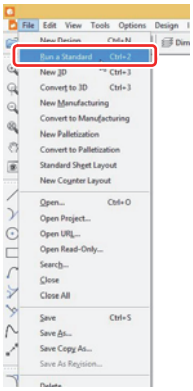


Creating a Box by Using a Standard Pattern

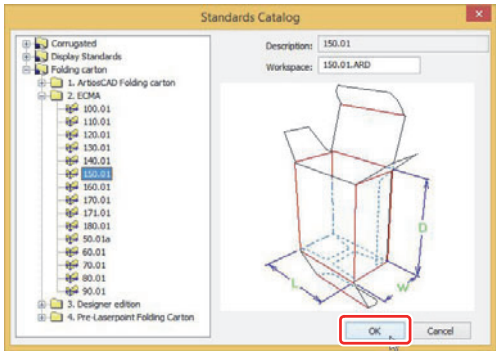
You can create a drawing simply by selecting a shape and entering dimensions.

Creating a Box by Selecting from the Standard Pattern Catalog

1 **Select [Run a Standard] in the [File] menu to open the [Standards Catalog] window.**

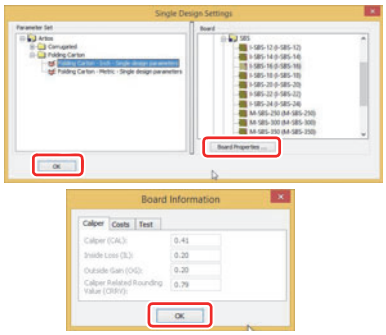


2 **Select the standard pattern you want to use and click the OK.**



3 **Set Single design.**

- Select [Parameter Set] and [Board] each and click OK.



How to check [Parameter Set]:

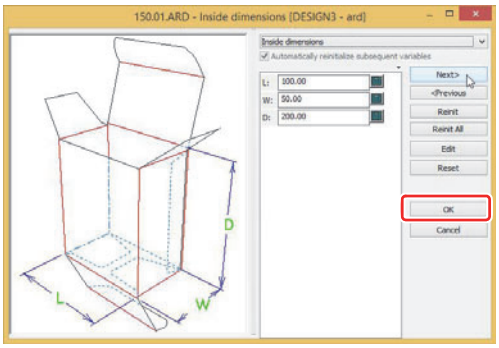
1. Select [Defaults...] in the [Options] menu to open the [Defaults] window.
2. Check from [Single design Parameter] in [Property defaults].

How to check [Board]:

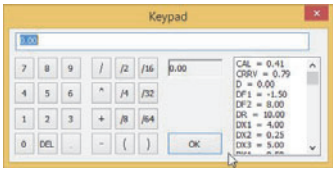
1. Click Board Properties... .
2. You can check the Board Information about the selected board.
   - If you cannot find an appropriate board for the material you want to use, you can edit or add the Board Information. Refer to P.1-5 "Adding / Editing Board Information".

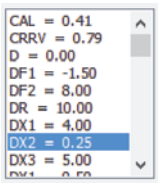
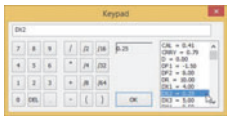
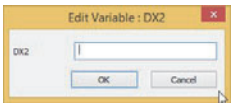
4 Enter inside dimensions and click OK.

- A box selected from the standard pattern catalog will be created completely.



● Explanations of the Standard Pattern Dimensions Input window

Button	Description
Next>	Allows you to move to the next page.
<Previous	Allows you to move to the previous page.
Reinit	Allows you to return the currently selected value to the default.
Reinit All	Allows you to return all the values on the currently selected page to the default.
Edit	Function Not available in ArtiosCAD DS.
Reset	Allows you to restore the values before change on the currently selected page. When you move to another page, the values on the current page are determined. In such a case, even by re-opening the current page and clicking the **Reset**, you cannot restore the values before change. ♦ if the values before change cannot be restored because you have moved to another page, click **Reinit** / **Reinit All** . You can reset the values to the default.
OK	Performs drafting with the entered dimensional values. For items not entered yet, uses the initial values to perform drafting.
Cancel	Cancels all and stops drafting from a standard pattern.
Inside dimensions	Moves to the selected page.
L: 100.00 W: 50.00 D: 200.00	Used to enter dimensions. These values show the portion each symbol indicates in the right half of the window. Click to display the keypad.
	The keypad. Displayed when you click .
DX2	The formula entry field. You can also enter the formula from the key-board.
7 8 9 4 5 6 1 2 3 0 DEL .	The keypad for entering values. [Numeric] key : Used to enter numerical values. [DEL] key : Used to delete entered values.
/ /2 /16 * /4 /32 + /8 /64 - ( )	The keypad for entering operators. [Operator] key : Used to enter operators. [/Numeric] key : Used to divide a value by the numerical value. If the denominator is not entered or immediately after an operator, 1 is used as the denominator. [DEL] key: Used to delete entered values.
0.25	The formula calculation result is displayed.

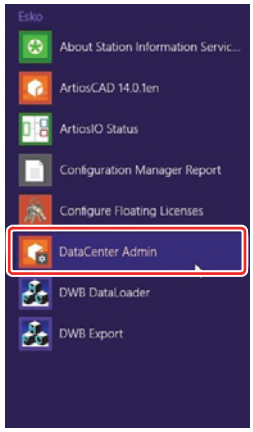
Button	Description
	You can check all the values you can specify using the standard pattern. Selecting (clicking) : Allows you to enter the formula into the entry field.  Double-clicking : Allows you to change the value. 

Adding / Editing Board Information

A material used for creating a box is called "Board".
When creating a box by using the standard pattern catalog, select an appropriate "Board" in the “Single Design Settings” window according to the material being used.
If you cannot find an appropriate board for the material you want to use out of the boards provided in ArtiosCAD DS, you can edit or add the Board Information as suitable for the material.

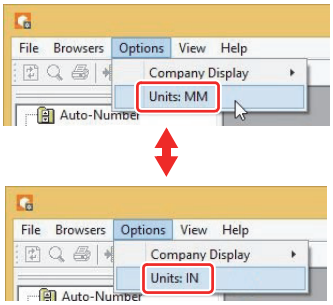
● Adding Board Information

1 Select [Start], [Esko], [ArtiosCAD], and then [Datacenter Admin] to start Datacenter Admin.

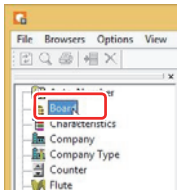


2 Click [Units] in the [Options] menu and set the unit.

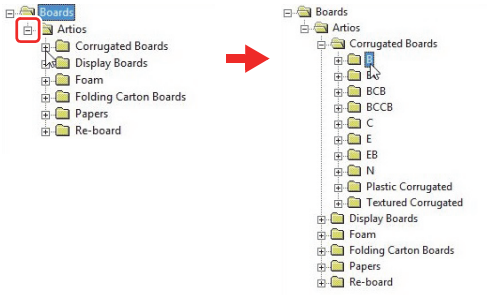
- Click the [Options] menu to display the unit currently set in the [Units] field ([IN]: inches / [MM]: millimeters). To change the setting, click [Units]. Each click switches the unit between [IN] and [MM]. (The setting is taken over when Datacenter Admin is started next time.)



3 Double-click [Board] to open [Board Browser].

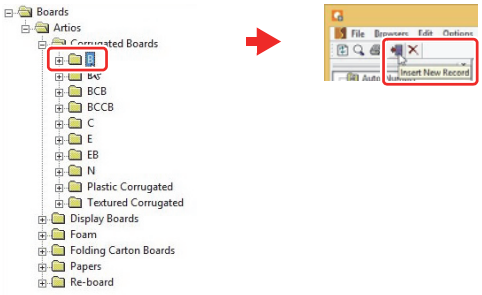


4 Click the mark [+] enclosed in a red rectangle in the right figure to display the registered boards.



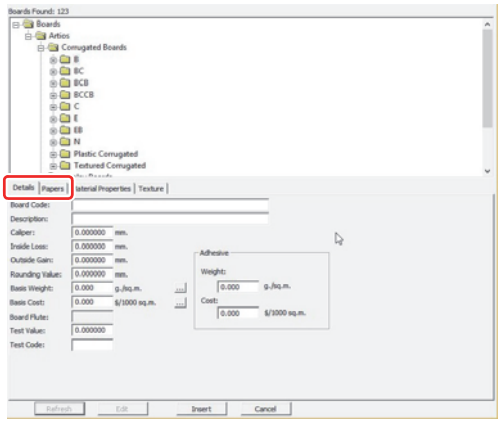
5 Click any registered folder and then click the [Insert New Record] icon at the top left of the window.

- A new board is added.
- You can also add a new board by right-clicking any registered folder and selecting [New] and [Board].

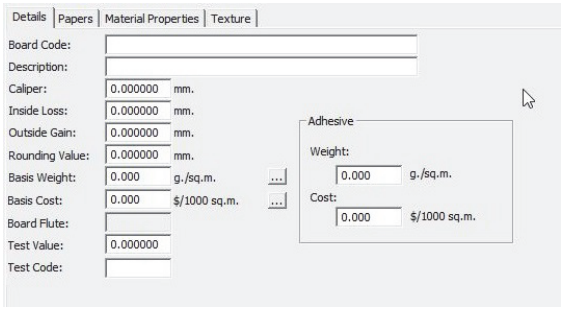


6 Set the added board.

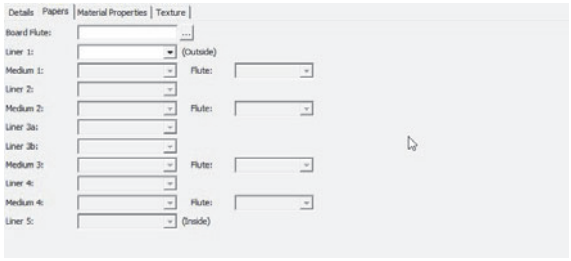
- Set the [Details] tab and the [Papers] tab displayed at the window's bottom. (For details about how to set, refer to the next page.)
- The [Material Properties] tab and the [Texture] tab are the settings used for 3D module display.
  You do not have to set them because the 3D module display is not available in ArtiosCAD DS.



[Details] Setting window



[Papers] Setting window



About Detailed Settings and Paper Settings

The following explains the [Details] setting window and the [Papers] setting window.
You can set the thickness of the board and the cost in [Details] setting window, and the elements included in the corrugated board in the [Papers] setting window.
Refer to the descriptions below for the settings.

♦ Items to be set in the [Details] setting window

Item	Description
Board Code	The code for identifying the material. Make sure to enter this item. (Otherwise, the board cannot be registered.) • You cannot enter the code used for other board. If you enter the code used for other board by mistake, the board is registered with the board code followed by the present time stamp automatically added.
Description	Enter the description on the material. Make sure to enter this item. (Otherwise, the board cannot be registered.)
Caliper	Enter the thickness of the material.
Inside Loss	The allowance used for folding or pasting the material. Typically, set the margin to half the thickness of the material.
Outside Gain	
Rounding Value	The value used for rounding off the dimension.
Basis Weight	The weight per unit.
Basis Cost	The cost per unit. • Click [...] to display “Calculated Basis Weight”. (The total board weight (or cost) automatically calculated based on the weight (or cost) of the paper constituting the board. Click [Accept] to enter the calculated value.)
Board Flute	Set in the [Papers] tab. The setting value is displayed.
Test Value	The weight required to break the material.
Test Code	The identifier for the test value. This indicates the strength of the board.

♦ Items to be set in the [Papers] setting window

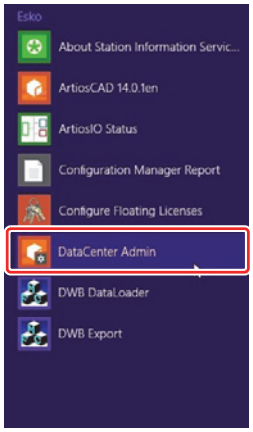
Item	Description
Board Flute	The symbol indicates the height of the wave portion in the corrugated board. • Click [...] to automatically detect the flute of the board. Click [Accept] to enter the automatically detect value.
Liner	Select the paper sheet that sandwiches the core in the corrugated board.
Medium	Select the paper sheet of the core in the corrugated board.
Flute	The symbol indicates the height and the number of the waves of the core.

7 **Click [Insert] to register the board.**

• A new board is registered.

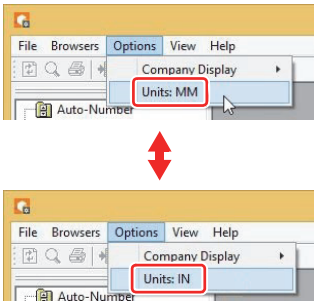
● Editing Board Information

1 **Select [Start], [Esko], [ArtiosCAD], and then [DataCenter Admin] to start Datacenter Admin.**

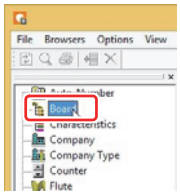


2 **Click [Units] in the [Options] menu and set the unit.**

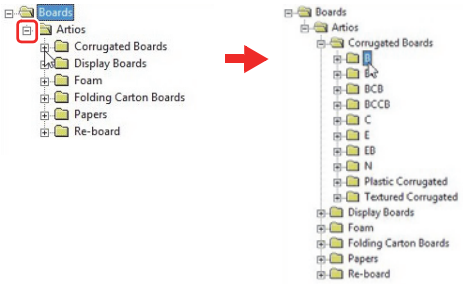
- Click the [Options] menu to display the unit currently set in the [Units] field ([IN]: inches / [MM]: millimeters). To change the setting, click [Units]. Each click switches the unit between [IN] and [MM]. (The setting is taken over when Datacenter Admin is started next time.)



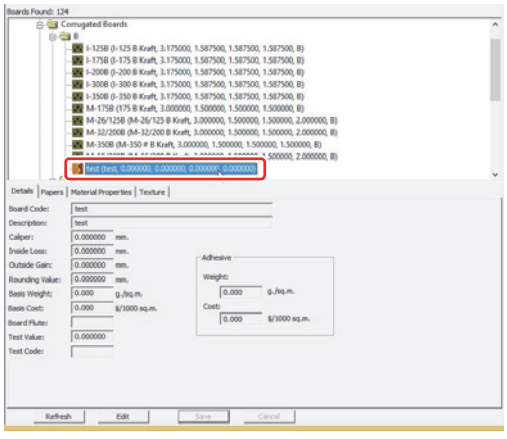
3 **Double-click [Board] to open [Board Browser].**



4 **Click the mark [+] enclosed in a rectangle in the right figure to display the registered boards.**



5 **Click the board whose settings you want to change from the board list at the window's top.**

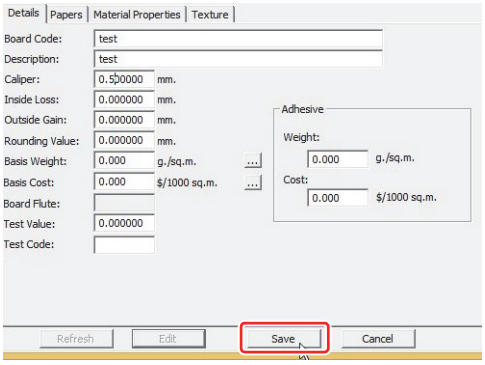


6 Click Edit.

- The setting value can be changed.

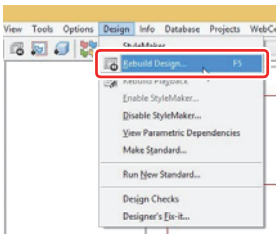
7 Enter the appropriate setting values and click Save.

- The setting values of the board have been edited.



Creating a Design Again by Changing the Dimensions of the Design Created from a Standard Pattern

1 Select [Rebuild Design...] in the [Design] menu.

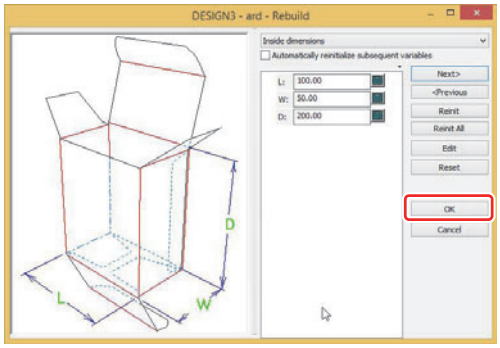


NOTE!	♦ If you edit the design in [Rebuild Design...], you cannot restore the original state by using [Undo]. Be careful.

2 Change dimensional values.

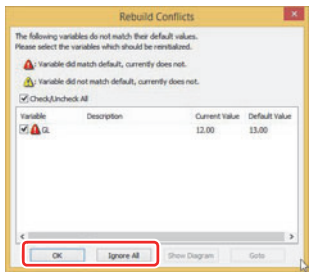
(1) Change and set again the values entered when selecting a standard pattern.
(2) When the setting operation is all completed, click OK.

- The box created from a standard pattern has been edited completely.



♦ For details about the Input window, refer to P.1-4 “Explanations of the Standard Pattern Dimensions Input window”.
♦ When the [Automatically reinitialize subsequent variables] checkbox is selected, all the values related to the items for which values have been re-entered will be automatically changed. The [Rebuild Conflicts] window does not appear.

NOTE!	**If the [Rebuild Conflicts] window appears** ♦ It is indicated that for the displayed variable, the [Current Value](currently set value) is different from the [Default Value] (value calculated from another value (recommended value)). Click OK, and the value for the selected item will be changed to the default. Click Ignore All to keep all the displayed values as [Current Value] regardless of whether any of their check boxes is selected.

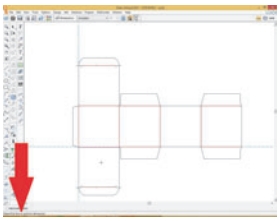


Creating a Box by Using a Geometry Macro

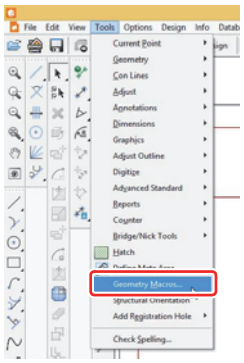
A geometry macro is a tool that makes it possible to use data of a frequently used shape in an arbitrary size. You can use such data by selecting the shape you want to use and entering dimensions for it.

Placing a Geometry Macro

♦ When drafting by using ArtiosCAD DS, operation guide information is displayed at the bottom left of the window as reference.

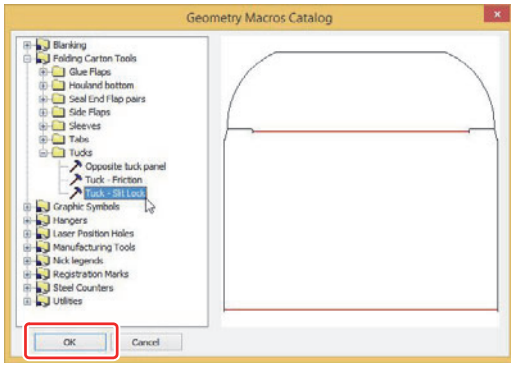


1 Select [Geometry Macros...] in the [Tools] menu to open the [Geometry Macros Catalog] window.



2 Select a geometry macro.

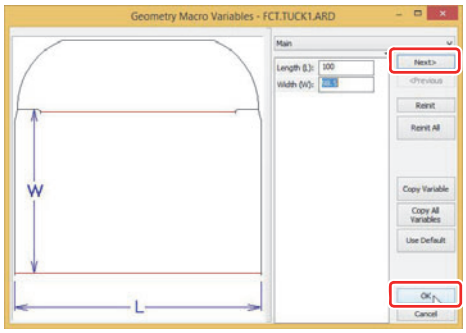
- Select a geometry macro you want to place and click OK.



3 Enter dimensions for the geometry macro.

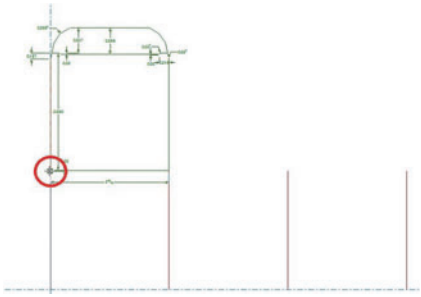
(1) Enter a value for each of the items indicated by the arrows in the figure.
- Depending on the type of geometry macro, you can enter a value further by pressing the [Next>] button.

(2) Check that all the values have been entered completely, and click OK.



4 Place the geometry macro.

- Click the point over which you want to place the geometry macro.



♦ You can place a geometry macro only over a specific point.
♦ When the [Repeat Placement] check box at the bottom of the window is selected, you can continuously place a geometry macro with the same dimensional values.

● If you want to place a geometry macro in a location other than over a specific point

To place in an arbitrary location.	**1.** Click to place a geometry macro in an arbitrary location.
To place in a position perpendicular to or in parallel with two lines.	**1.** Click . **2.** Select two straight lines by clicking. **3.** Place a geometry macro in a position perpendicular to or in parallel with the straight lines.
To place on a specific line.	**1.** Click to place a geometry macro on a specific line.

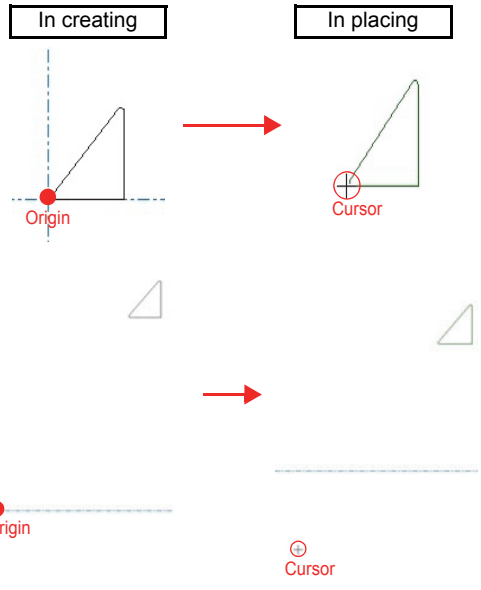
Registering a Self-made Geometry Macro

If you want to use the same design on multiple places, register the design as a geometry macro to readily work on the design.
This section describes how to register a geometry macro.

NOTE!	♦ You cannot change the size of the registered geometry macro by entering the dimensions in placing, unlike the geometry macro provided in ArtiosCAD DS.

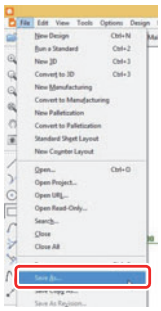
1 Create a design you want to register as a geometry macro.

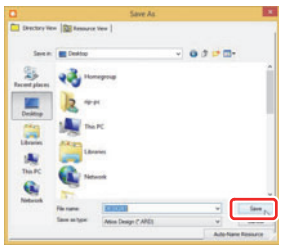
- Create a self-made geometry macro by using the origin as reference.
  Use the origin as reference to place the self-made geometry macro.



2 Select the [File] menu and then [Save As...] to save the created design.

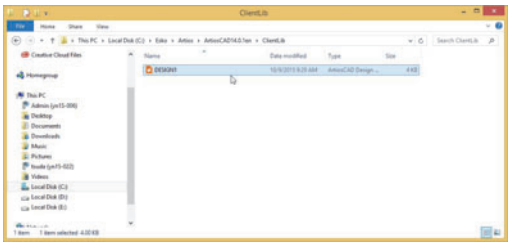
- When saving the design, select [Artios Design (*.ARD)] format.





3 Start the Explorer and copy the file saved in step 2, in the clientlib folder or the serverlib folder.

- The CliantLib folder or the ServerLib is located in the directory below.
- ArtiosCAD DS installation folder\ArtiosCAD version\ClientLib



Example : \Esko \Artios \ArtiosCAD14.0.1ja \ClientLib

ArtiosCAD DS installation folder

ArtiosCAD DS version

The CliantLib folder

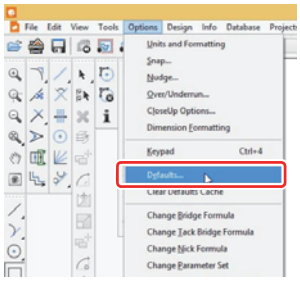
♦ cannot be shared with other users. If you want to use the data locally, copy the data in a file in this folder.

The ServerLib folder

♦ can be shared with other users. Files in the folder can be taken over when upgrading ArtiosCAD DS.

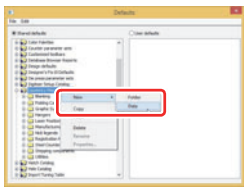
4 Select [Defaults...] in the [Options] menu.

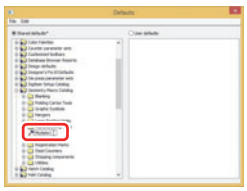
- The [Defaults] window opens.



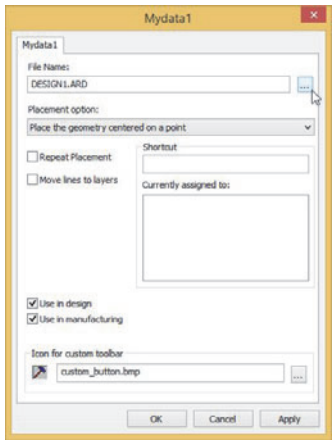
5 Right-click [Geometry Macros Catalog], and select [New] and [Data].

- You can save the file of the created data under an arbitrary name.





6 Double-click the file of the created data to open the window.



7 Set as following and click OK.

Entering File name:
- Click ... on the right side of the input field and select the file copied in step 3.

Specifying Placement option:
- Specify positions for placing the geometry macro or other options.

Setting Repeated Placement:
- Select this option to repeatedly place the geometry macro after placing it once.

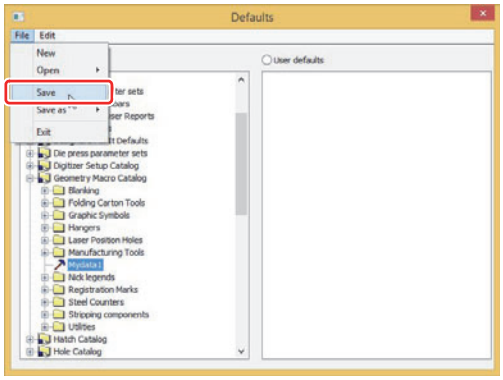
Setting Move lines to layers:
- Allows you to always write the geometry macro in the "Main Design]" layer.

Setting Shortcut:
- You can register any shortcut key. Use a shortcut to place the geometry macro without opening [Geometry Macros Catalog] from the [Geometry Macros] in the [Tools] menu.
  Follow the procedure below to register a shortcut key.
  (1) Click the shortcut entry field to confirm that the cursor appears.
  (2) Entry the shortcut key(s) you want to use.
  For example, if you want to use [Ctrl] key + [Shift] key + [M] key as a shortcut, press the [M] key while holding down the [Ctrl] key and the [Shift] key.

Currently assigned to:
- This lists the shortcut key(s) you have set and already used for other functions.

8 Select [Save] in the [File] menu to save the default setting.

- The self-made geometry macro has been registered.
- For details about the placement, refer to P.1-11 "Placing a Geometry Macro".

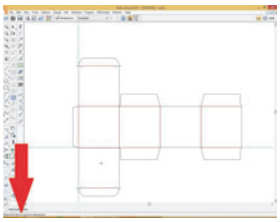


Editing a Design

You can select and edit (copy / flip / move) an already created box design.

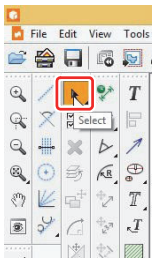
Moving a Design

♦ When drafting by using ArtiosCAD DS, operation guide information is displayed at the bottom left of the window as reference.



1 **Click the [Select] icon in the toolbar.**

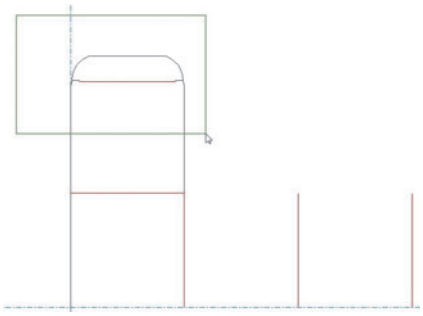
- You can also select by clicking the [Edit] menu, [Select].

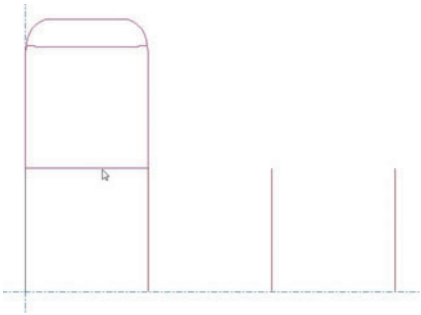


2 **Select the design you want to move.**

- Select the design you want to move by using the mouse.

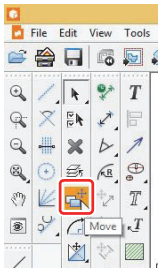
♦ To collectively edit data, select multiple line segments by either specifying a range using a selection tool or clicking line segments while holding down the [Shift] key.

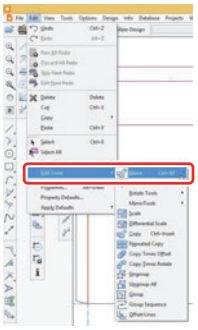




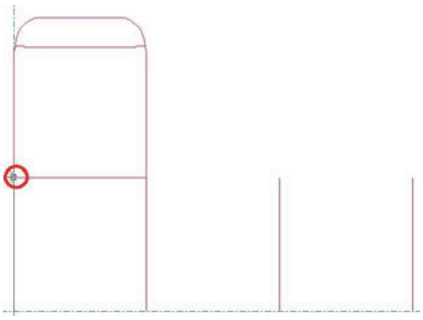
3 Click the [Move] icon in the toolbar.

- Alternatively, click the [Edit] menu, [Edit Tools], and then [Move] .



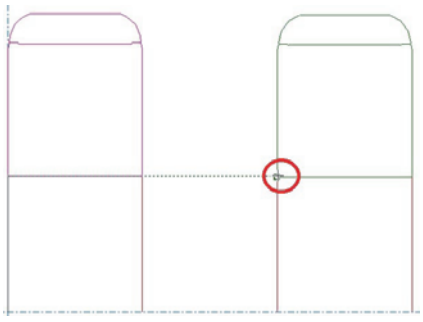


4 Click the point to be used as reference for placement (pickup point).



5 Reposition the design.

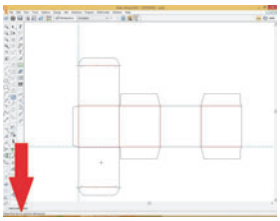
- The following two methods are available for repositioning.
  Method 1 : Click the target point at the destination (where to place the pickup point).
  Method 2 : Move the design by entering values in the fields at the bottom of the window.
  - When two out of the four values - Angle, Length, X-axis position, and Y-axis position - are determined, the design moves.
  - To determine the definite values entered, after typing values, press the [Enter] key.



- The transfer of the design is completed.

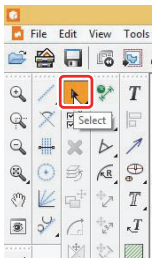
Copying a Design

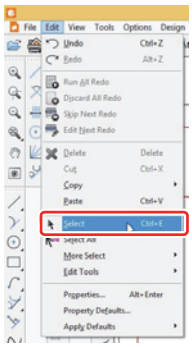
♦ When drafting by using ArtiosCAD DS, operation guide information is displayed at the bottom left of the window as reference.



1 Click the [Select] icon in the toolbar.

- You can also select by clicking the [Edit] menu, [Select].

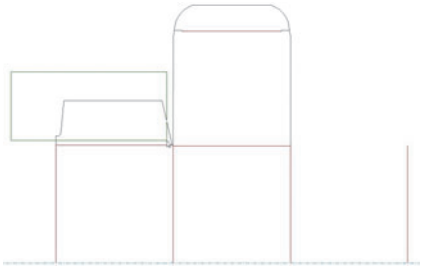


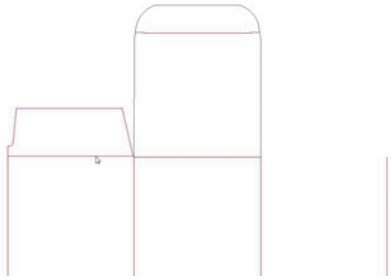


2 Select the design you want to move.

- Select the design you want to move by using the mouse.

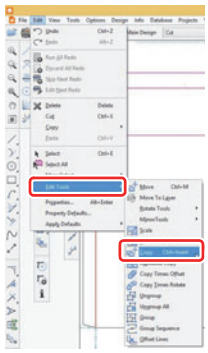
♦ To collectively edit data, select multiple line segments by either specifying a range using a selection tool or clicking line segments while holding down the [Shift] key or [Ctrl] key.



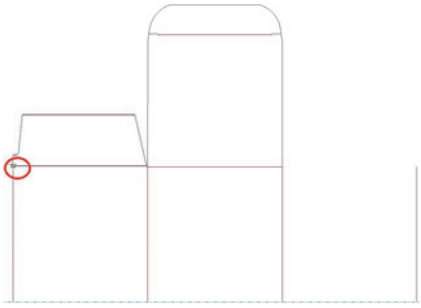


3 Click the [Copy] icon in the toolbar.

- Alternatively, click the [Edit] menu, [Edit Tools], and then [Copy].



4 Click the point to be used as reference for copying (pickup point).



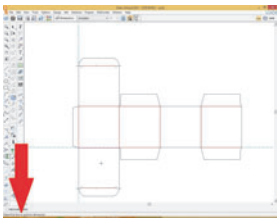
5 Placing the Copied Design.

- The Copied Design is placed on the woking layer.
- If the [Distribute to layers] check box is checked, the design is placed to the layer where the original design is.
- The following two methods are available for placement.
  Method 1 : Click the point where you want to place the copied design (where to put the pickup point).
  Method 2 : Place the copied design by entering values in the fields at the bottom of the window.
  - When two out of the four values - Angle, Length, X-axis position, and Y-axis position - are determined, the copied design is placed.
  - To determine the definite values entered, after typing values, press the [Enter] key.

- The copying of the design is completed.

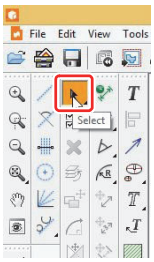
Flipping a Design

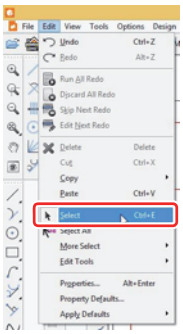
♦ When drafting by using ArtiosCAD DS, operation guide information is displayed at the bottom left of the window as reference.



1 Click the [Select] icon in the toolbar.

- You can also select by clicking the [Edit] menu, [Select].

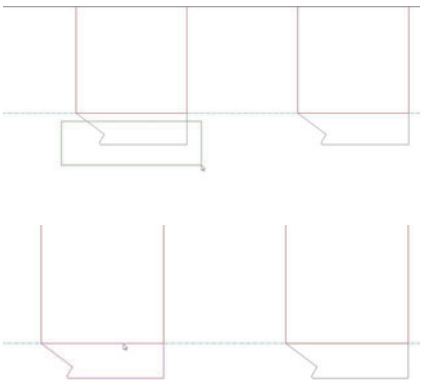




2 Select the design you want to move.

- Select the design you want to move by using the mouse.

♦ To collectively edit data, select multiple line segments by either specifying a range using a selection tool or clicking line segments while holding down the [Shift] key.

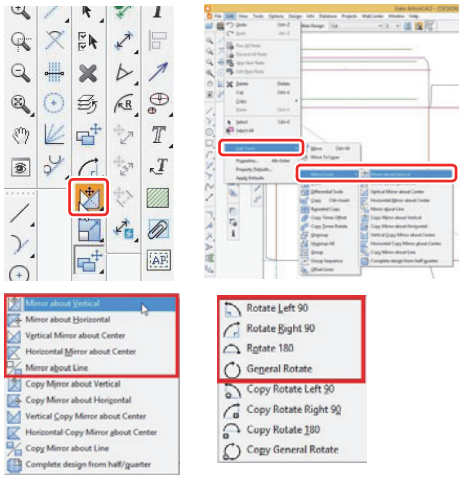


3 Click the [Mirror about Vertical] icon in the toolbar.

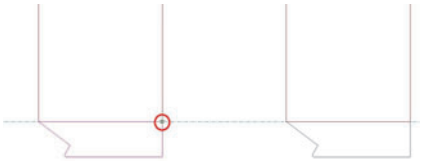
- Alternatively, click the [Edit] menu, [Edit Tools], [Mirror Tools], and then [Mirror about Vertical].

♦ Besides [Mirror about Vertical], you can flip or rotate in various directions.

NOTE!	♦ A tool that displays a red frame when selected alters the selected data itself. Other tools alter copied data.

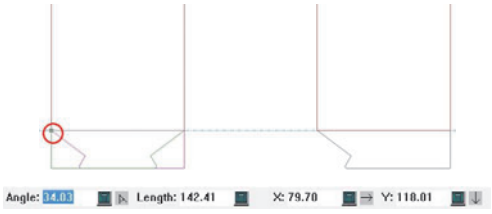


4 Click the point to be used as reference for flipping (pickup point).



5 Place the flipped design.

- The following two methods are available for placement.
  Method 1 : Click the point where you want to place the flipped design (where to put the pickup point).
  Method 2 : Place the flipped design by entering values in the fields at the bottom of the window.
  - When two out of the four values - Angle, Length, X-axis position, and Y-axis position - are determined, the flipped design is placed.
  - To determine the definite values entered, after typing values, press the [Enter] key.



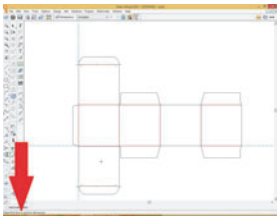
- The flipping of the design is completed.

The Drawing Tool

This section describes how to draw a straight line.

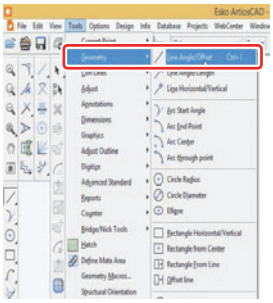
Creating a New Line

♦ When drafting by using ArtiosCAD DS, operation guide information is displayed at the bottom left of the window as reference.



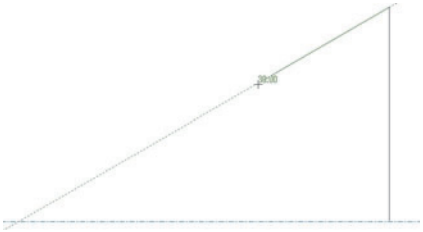
1 Click the [Line] icon in the toolbar.

- You can also select by clicking the [Tools] menu, [Geometry], and then [Line Angle / Offset].



2 Cancel the start point of the line.

- The start point of the line is automatically set to the end point of the last created line. Press the Ctrl + Q keys to cancel this setting.



3 Determine the start point of a new line.

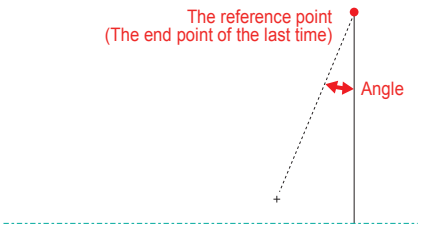
- The end point of the last created line that cancelled in step 2 will be the reference point to determine the start point of the new line. The following two methods are available for determining the start point of the new line.

Method 1

(1) Click to determine the angle from the reference point.

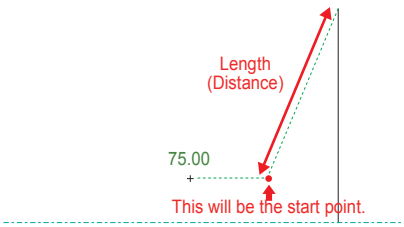
•

If you have determined the point that will be the start point (a square white dot displayed on the screen when you select the start point) at the first click, you do not have to determine the distance in step 2 because the angle and the distance are determined at the same time.



♦ The point stands for a square white dot displayed when you put the mouse pointer on the screen as shown in the right figure.

(2) Click to determine the distance from the reference point.



Method 2

- You can determine the start point by entering two out of the four values at the window's bottom ([Angle] from the reference point / [Length] of the distance from the reference point / the moved distance from the reference point to the start point along X-axis / the moved distance from the reference point to the start point along Y-axis).

(1) Use an arrow key or the [Tab] key to select the item to be entered.

(2) Press the [Enter] key to determine.

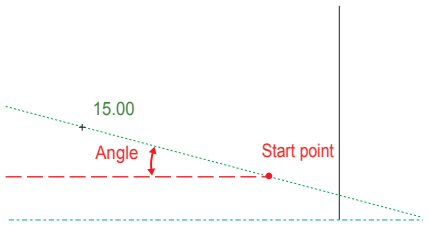
4 Determine the end point of the line to create the straight line.

- The start point determined in step 3 will be the reference point to determine the end point.

Method 1

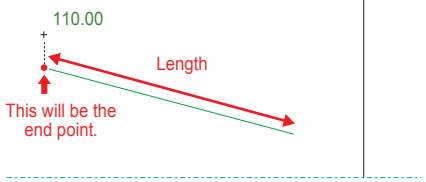
(1) Click to determine the angle from the reference point.

- If you have determined the point that will be the end point (a square white dot displayed on the screen when you select the end point) at the first click, you do not have to determine the distance in step 2 because the angle and the distance are determined at the same time.



♦ The point stands for a square white dot displayed when you put the mouse pointer on the screen as shown in the right figure.

(2) Click to determine the distance from the reference point.



Method 2

- You can determine the start point by entering two out of the four values at the window's bottom ([Angle] from the reference point / [Length] of the line / the moved distance from the reference point to the end point along X-axis / the moved distance from the reference point to the end point along Y-axis).

(1) Use an arrow key or the [Tab] key to select the item to be entered.

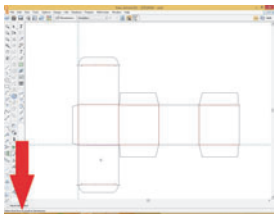
(2) Press the [Enter] key to determine.

Adjusting a Line

You can adjust the straight line you have created.
This section describes how to adjust the straight line by using the following four tools.

[Trim / Extend] : The tool for lengthening or shortening the line up to the intersecting point.
[Trim Interior Section] : The tool for removing the selected line segment up to the point where the selected line segment intersects another line segment.
[Blend] : The tool for converting the shape of the corner into the arc having the specified radius.
[Extend Line] : The tool for extending the selected line by the specified value.

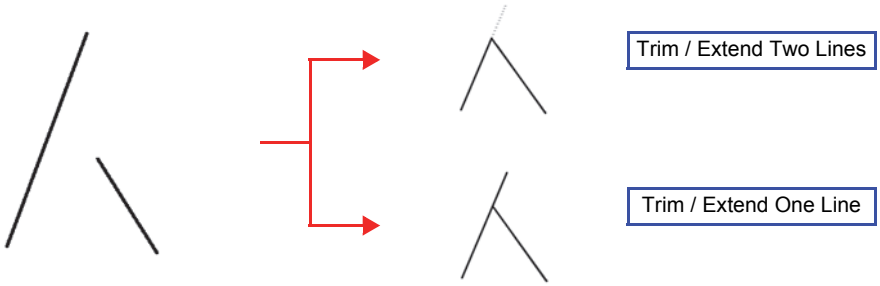
♦ When drafting by using ArtiosCAD DS, operation guide information is displayed at the bottom left of the window as reference.



● Adjusting a line by using the [Trim / Extend] tool

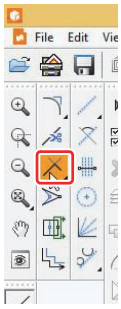
The [Trim / Extend] tool lengthens or shortens the line up to the intersecting point as shown in the following figure.

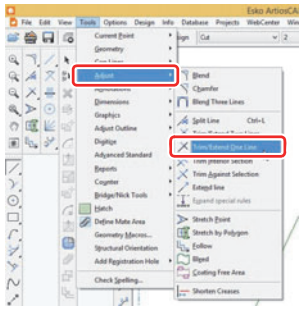
Trim / Extend Two Lines : Lengthens or shortens both the selected two line segments.
Trim / Extend One Line : Lengthens or shortens only the first selected line segment.



1 Click [Trim/Extend Two Lines] icon in the toolbar.

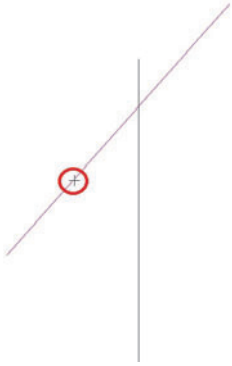
- Alternatively, select the [Tools] menu, [Adjust], and then [Trim / Extend Two Lines].
- To use [Trim / Extend One Line] tool, select the [Tools] menu, [Adjust], and [Trim / Extend One Line].





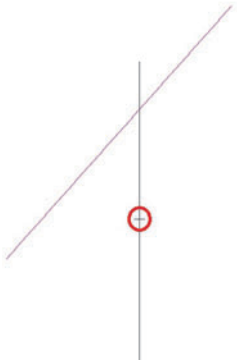
2 Click the first line to select.

- Only the line segment selected here will be lengthened or shortened if you have selected the [Trim / Extend One Line] tool.



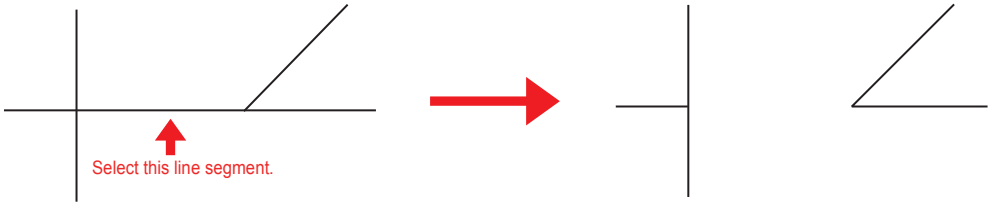
3 **Click the second line to select.**

- Trim / Extend is completed.

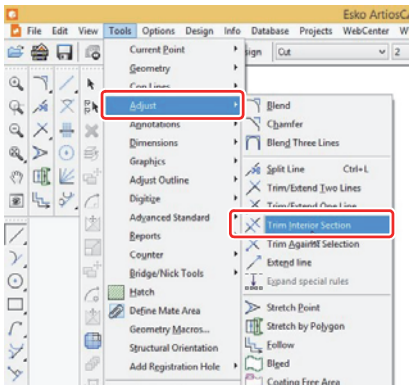


● Adjusting the line by using the [Trim Interior Section] tool.

Use the [Trim Interior Section] tool if you want to remove unnecessary line segment when the selected line segment intersects other line segments as shown below.



1 **Select the [Tools] menu, [Adjust], and [Trim Interior Section].**

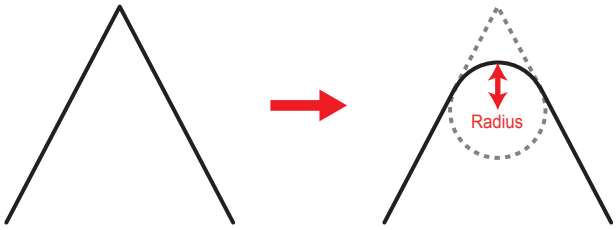


2 **Click the line segment you want to trim.**

- Trim Inner Section is completed.

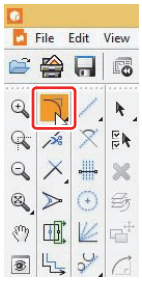
● Adjusting a line by using the [Blend] tool

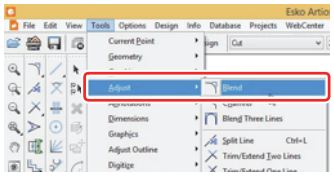
Use the [Blend] tool if you want to convert the corner of the line segment into the arc having the specified radius as shown below.



1 Click the [Blend] icon in the toolbar.

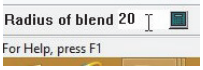
- Alternatively, select the [Tools] menu, [Adjust], and then [Blend].





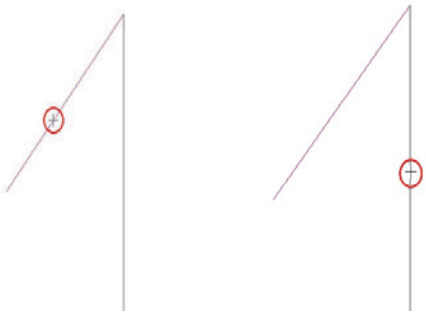
2 Set the radius used for Blend.

- Enter an appropriate value in [Radius of blend] at the window's bottom.



3 Click the two lines constituting the corner you want to create (by blending the lines) to select.

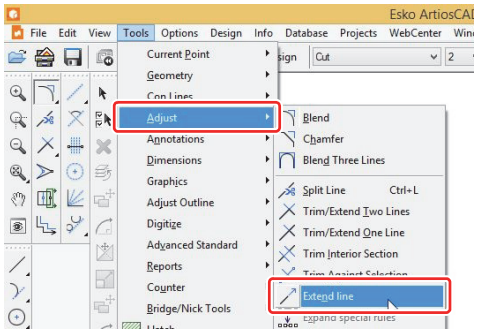
- Blend is completed.



● Adjusting a line by using the [Extend line] tool

You can extend the selected line by the specified value.

1 Select the [Tools] menu, [Adjust], and [Extend line].



2 Specify the amount for extending the line.

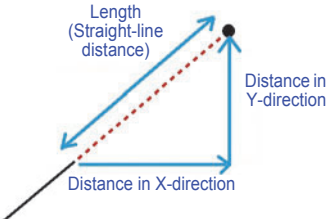
If the straight-line distance to the point is apparent up to which you want to extend the line segment

- Select the [Length] check box and enter the straight-line distance.

If the straight-line distance to the point is not apparent up to which you want to extend the line segment,

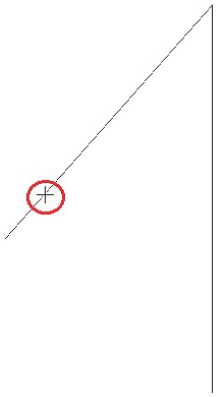
- Select the [X|Y] check box and enter the distance in X-direction or the distance in Y-direction.

The point for extending the line segment



3 Click the line you want to extend.

- The end closer to the clicked position is extended.

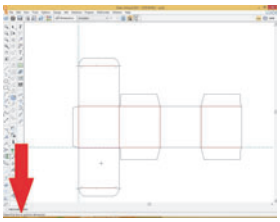


Creating a New Window or Plane

You can create a new plane or a new window through which the inside of the box is visible from the outside.
To create a new plane or a new window, use the following three tools.

[Rectangle] : The tool for creating a quadrangle. Also used for rounding a corner.
[Offset line] : The tool for creating a parallel line with the selected line, or a parallel arc with the selected arc.
[Rectangle From Line] : The tool for creating a quadrangle by selecting a straight line that will serve as a side of the quadrangle.

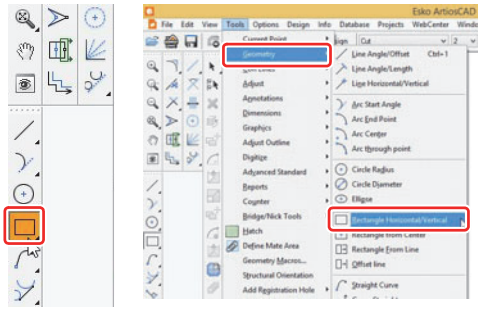
♦ When drafting by using ArtiosCAD DS, operation guide information is displayed at the bottom left of the window as reference.



● Using the [Rectangle] tool

1 **Click the [Rectangle] icon in the toolbar.**

- You can also select by clicking the [Tools] menu, [Geometry], and then [Rectangle Horizontal / Vertical].



2 **Cancel the start position of a quadrangle.**

- The start position of a quadrangle is automatically set to the end point of the last created quadrangle.
  Press the Ctrl + Q keys to cancel this setting.

3 **Determine a vertex of a new quadrangle.**

- The end point of the last created quadrangle that cancelled in step 2 will be the reference point to determine the start point of the new quadrangle. The following two methods are available for determining the start point of the new quadrangle.

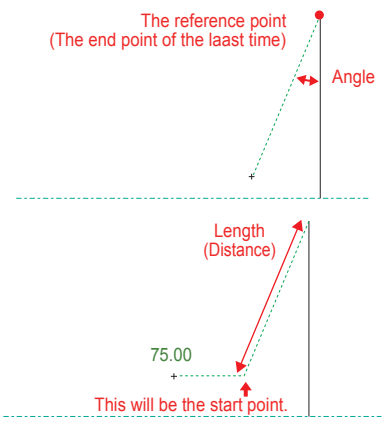
Method 1

(1) Click to determine the angle from the reference point.

- If you have determined the point that will be the start point (a square white dot displayed on the screen when you select the start point) at the first click, you do not have to determine the distance in step 2 because the angle and the distance are determined at the same time.

♦ The point stands for a square white dot displayed when you put the mouse pointer on the screen as shown in the right figure.

(2) Click to determine the distance from the reference point.



Method 2

- You can determine the start point by entering two out of the four values at the window's bottom ([Angle] from the reference point / [Length] of the distance from the reference point / the moved distance from the reference point to the start point along X-axis / the moved distance from the reference point to the start point along Y-axis).

(1) Use an arrow key or the [Tab] key to select the item to be entered.
(2) Press the [Enter] key to determine.

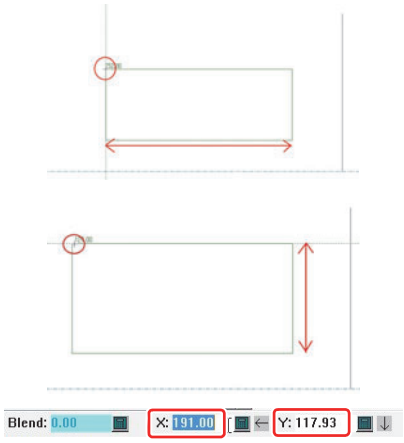
♦ Once you have determined one of the vertexes, you can draw a quadrangle having rounded corners. If you want to draw a quadrangle having rounded corners, enter the radius of the arc in [Blend] at the window's bottom and press the [Enter] key.

♦ If the Blend value is set to "0", the corners of the quadrangle are not rounded.

4 Determine the Length in X-direction / in Y-direction to draw the quadrangle.

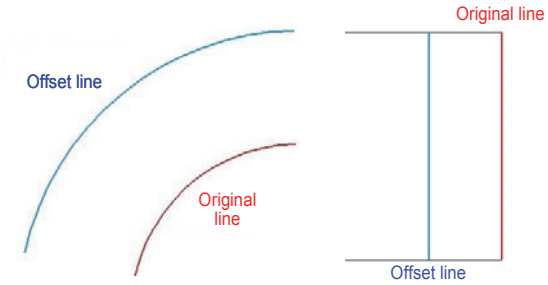
(1) Click the position where the length is determined in X-direction.
(2) Click the position where the length is determined in Y-direction.

- You can also determine the lengths by entering appropriate values in [X] and [Y] at the window's bottom.

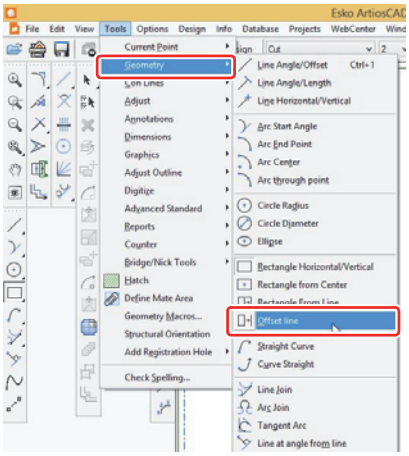


● Using the [Offset line] tool

The [Offset line] tool allows you to create a parallel line with the selected line, or a parallel arc with the selected arc.



1 Select the [Tools] menu, [Geometry], and then [Offset line].



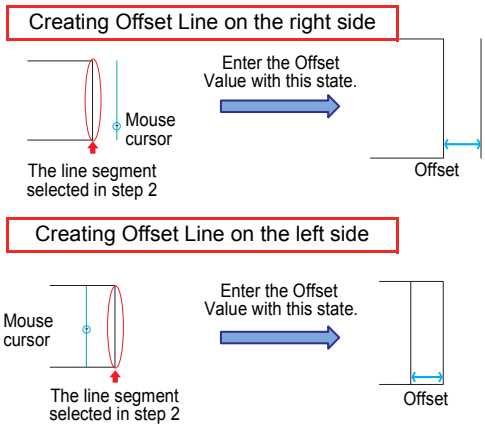
2 Click the line for which you want to create an Offset Line.

3 Click the position where you want to place a new line segment to create an Offset Line.

- You can also create an Offset Line by entering the [Offset] value at the window's bottom.
  If you want to create an Offset Line by entering the [Offset] value, follow the procedure below.

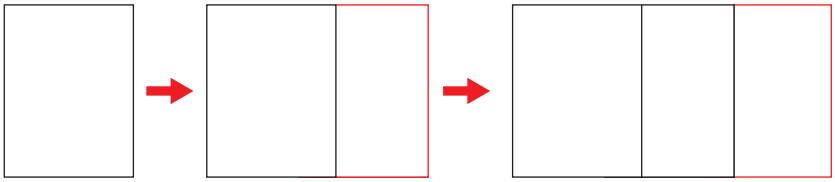
(1) Move the mouse cursor in the direction where you want to create an Offset Line from the line selected in step 2.

(2) Enter the [Offset] value at the window's bottom while pointing the mouse cursor there.
Press the [Enter] key to determine.

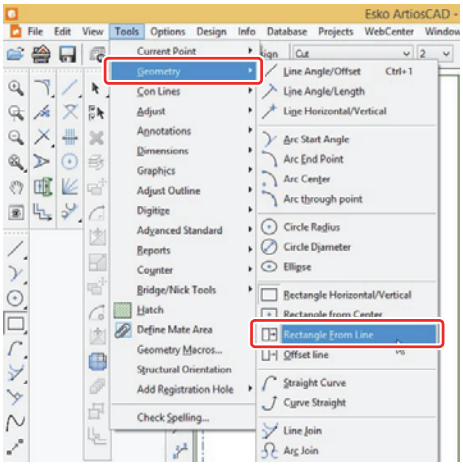


● Using the [Rectangle From Line] tool

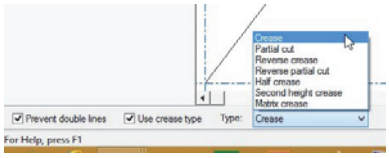
The [Rectangle From Line] tool allows you to create a quadrangle including the selected straight line that will serve as a side of the quadrangle.



1 Select the [Tools] menu, [Geometry], and then [Rectangle From Line].



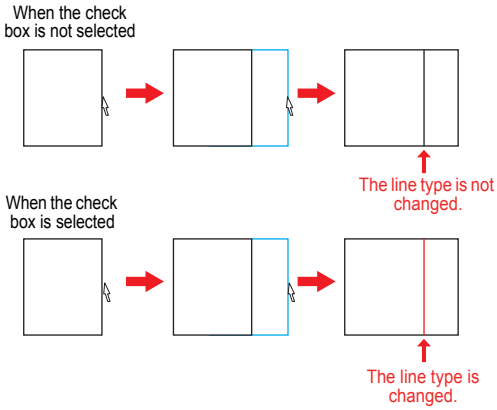
2 Click the straight line serving as a side and set the items at the window's bottom.



[Prevent double lines]:
Select this check box to prevent the quadrangle from being created with Double Line (P.1-48).

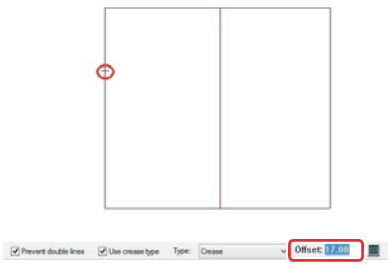
[Use crease type]:
Select this check box to automatically convert the line type of the line segment inside the drawing as shown on the right.

[Type]:
If you have selected the [Use crease type] check box, you can click [Type] to set a line type other than the Ruled Line.



3 Determine the size of the quadrangle by clicking.

- A quadrangle is created from the selected line.
- You can also create a quadrangle by entering the distance from the selected line in the [Offset] value at the window's bottom.

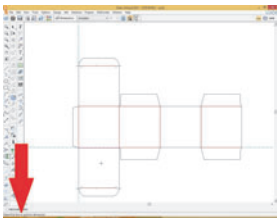


Creating an Auxiliary Line

You can create an auxiliary line by using the following two tools.

[Conline Offset / Angle] : The tool for drawing an auxiliary line based on the selected line or point.
[Conline Divide / Midpoint] : The tool for creating an auxiliary line that divides the line segment by an arbitrary number.

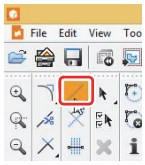
♦ Although the created auxiliary line is written in the layer where you are working on, but it is not output.
♦ When drafting by using ArtiosCAD DS, operation guide information is displayed at the bottom left of the window as reference.

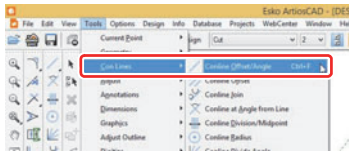


● Drawing an auxiliary line by using [Conline Offset / Angle] tool

1 **Click the [Conline Offset / Angle] icon in the toolbar.**

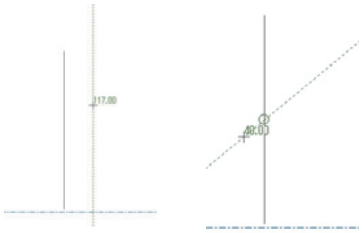
- You can also select by selecting the [Tools] menu, [Con Lines], and [Conline Coordinates / Angle].





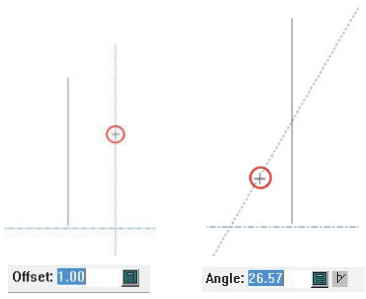
2 **Click the line or point to be the reference.**

If the line is selected
Draw an auxiliary line parallel with the selected line.
If the point is selected
Draw an angled auxiliary line passing through the selected point.



3 **Create an auxiliary line.**

If the line is selected in step 2
Click the position where the auxiliary line is displayed or enter the [Offset] value at the window's bottom to create an auxiliary line.
If the point is selected in step 2
Click to determine the angle of the auxiliary line or enter the [Angle] value at the window's bottom to create an auxiliary line.

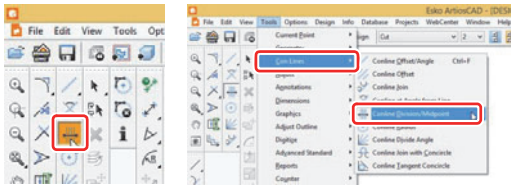


● Drawing an auxiliary line by using [Conline Divide / Midpoint] tool

This tool allows you to create an auxiliary line that divides the line segment by an arbitrary number.

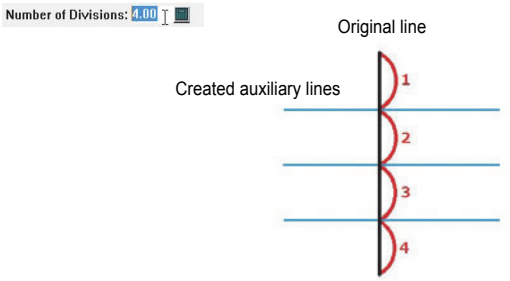
1 Click the [Conline Divide / Midpoint] icon in the toolbar.

- You can also select by selecting the [Tools] menu, [Con Lines], and [Conline Line Divide / Midpoint].



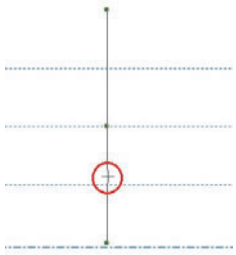
2 Set the division number.

- Enter an appropriate value in [Number of Divisions] at the window's bottom. (If you enter "4", the line segment is divided into four segments and three auxiliary lines are created.)



3 Click the line segment you want to divide.

- The divided auxiliary lines are created.

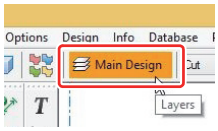


Layer Operation

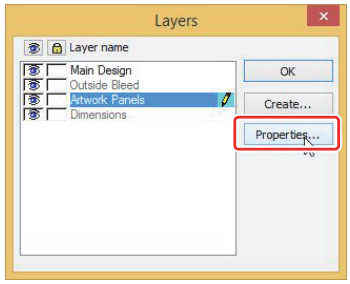
This section describes how to remove a layer, and how to move selected data to another layer.

● Removing unnecessary layer

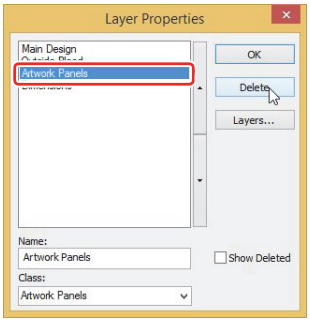
1 **Click the [Layers] icon to open the [Layers] window.**



2 **Select the layer you want to remove in the list on the left in the window and click the [Properties...] button.**



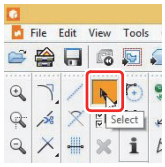
3 **Confirm that an appropriate layer is selected and click Delete .**

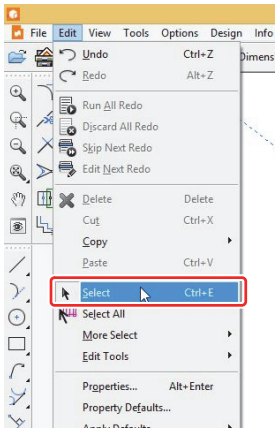


● Moving the selected design to another layer

1 Click the [Select] icon in the toolbar.

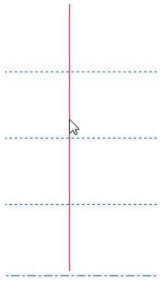
- You can also select by clicking the [Edit] menu and [Select].





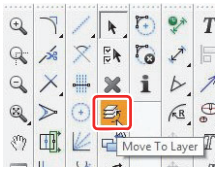
2 Select the design you want to move to another layer.

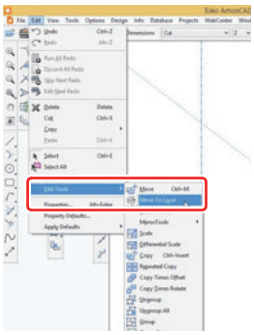
- You can select multiple designs by clicking while holding down the [Shift] key.



3 Click the [Move To Layer] icon in the toolbar.

- You can also select by clicking the [Edit] menu, [Edit Tools], and then [Move To Layer].





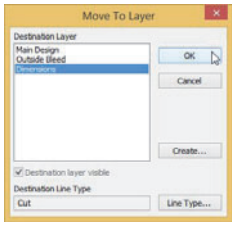
4 Select the layer and the line type at the destination.

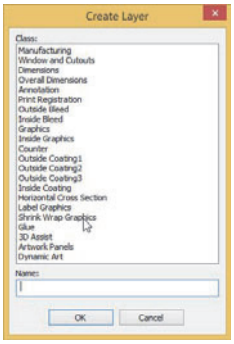
(1) Select the layer at the destination out of the layers listed on the left.
- You can create a new layer by clicking the [Create…] button.

(2) Set the line type at the destination.
- Select the line type on the destination layer.

(3) Click OK.

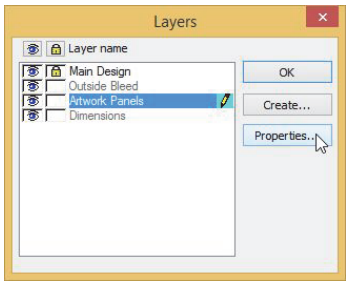
- If the [Destination layer visible] check box is selected, the selected layer can be displayed even if it is in Hide state.

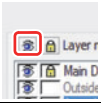
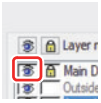
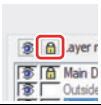
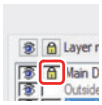




How to use the layer window

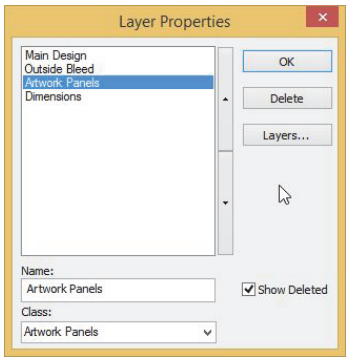
The following explains the icons and buttons displayed in the layer window.

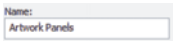
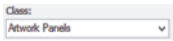
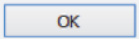
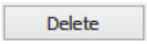
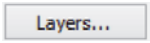
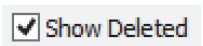
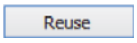


Icon / Button	Description
	Switches Show / Hide of all the layers. If mark is displayed, the layers are displayed.
	Switches Show / Hide for the selected layer. If mark is displayed, the layer is displayed.
	Switches Lock / Unlock for all the layers. If mark is displayed, you cannot edit the layers.
	Switches Lock / Unlock for the selected layer. If mark is displayed, you cannot edit the layer.
	Indicates that you are working on this layer.
OK	Click this button when you close the window.
Create...	Click this button when you create a new layer. The layer creation window will be displayed. Follow the procedure below. **1.** Select the class (the layer type) and name the layer. **2.** Click OK.
Properties...	Click this button when you display the layer Properties window.

How to use the layer Properties window

The following explains the icons and indications displayed in the layer Properties window.



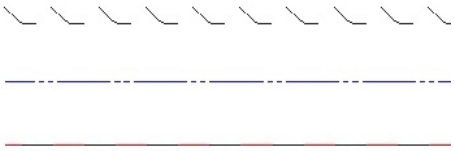
Indication / Button	Description
	Displays the name of the layer.
	Displays the type of the layer.
	Click this button when you close the window.
	Click this button when you remove the selected layer.
	Click this button when you display the layer window.
	Select this box to display the removed layer in the layer list.
	Click this button to reuse (restore) the removed layer. Select the removed layer and click the [Reuse] button.
	Moves the selected layer by one level up.
	Moves the selected layer by one level down.

Creating a Special Cutline

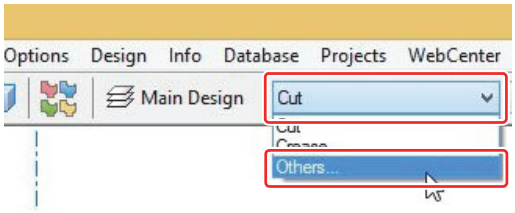
Creating a Special Cutline

This section describes how to create a special cutline such as a zipper and dotted line.

Cutline example

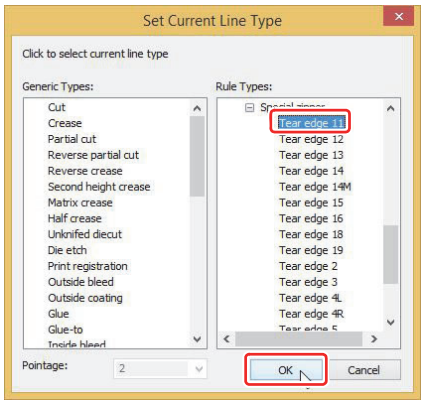


1 **Click the Line Type drop-down list box at the window's top and select [Others...].**



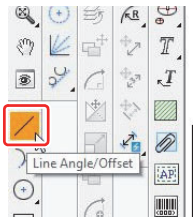
2 **Select the cutline you want to use.**

- Select the line type you want to use from [Generic Types] or [Rule Types] and click OK.



3 **Draw a line by using the [Line Angle/Offset] tool.**

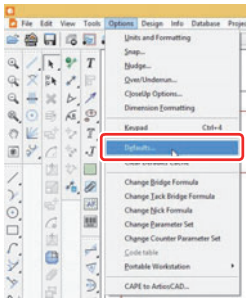
- A line of the selected line type is drawn.



Detailed Settings for a Special Cutline

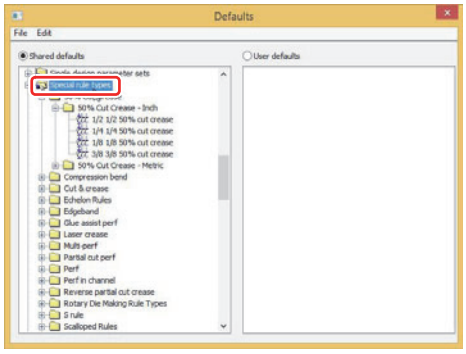
You can change the shape of a cutline previously prepared.

1 Click [Options] and [Defaults], and then open the [Defaults] window.



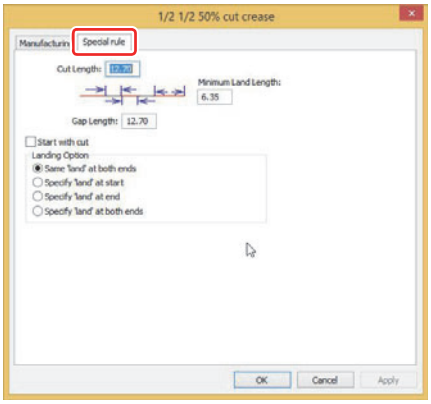
2 Open the Special rule types Setting window.

- Select the name of the line type whose settings you want to change from [Special rule types] in [Shared defaults], and double-click the mouse.



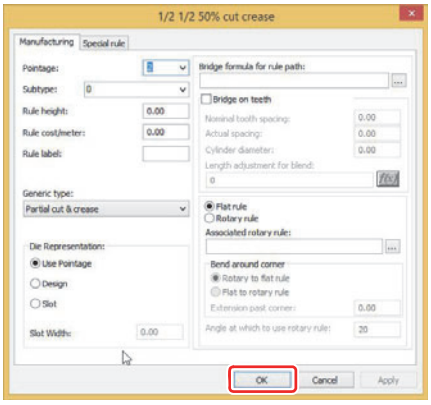
3 Check the shape of the cutline.

- You can check the shape of the cutline by clicking the [Special rule] tab.



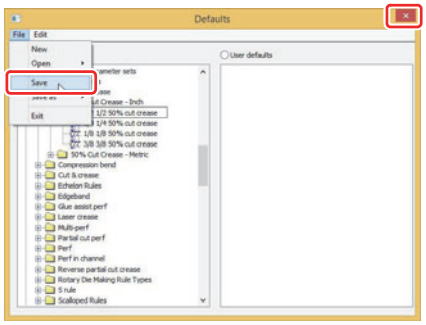
4 Configure settings.

- When the setting operation is completed, click OK.



5 Save the configured settings for the cutline.

- Select [Save] in the [File] menu to save the settings, and close the [Defaults] window.

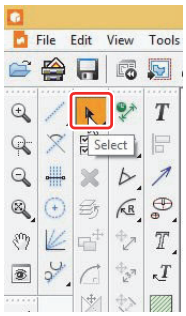


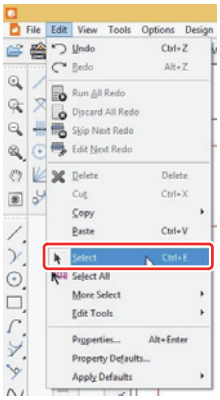
Changing the Shape of an Already Drawn Cutline

You can change the shape of a cutline that was already drawn.

1 Click the [Select] icon in the toolbar.

- You can also select by clicking the [Edit] menu, [Select].

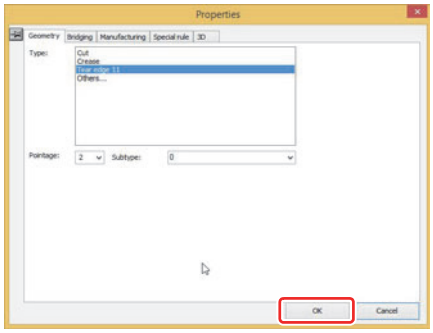




2 Double-click the cutline whose shape you want to change.

3 Configure settings.

- When the setting operation is completed, click OK.



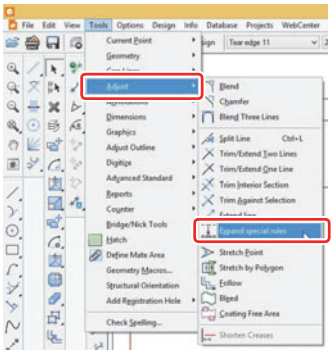
Changing to a WYSIWYG Cutline

This operation converts a cutline drafted by the special rule types setting into a WYSIWYG cutline.

1 **Select the cutline you want to change.**

2 **Select the [Tools] menu, [Adjust], and then [Expand special rules].**

- It is converted to a WYSIWYG cutline.



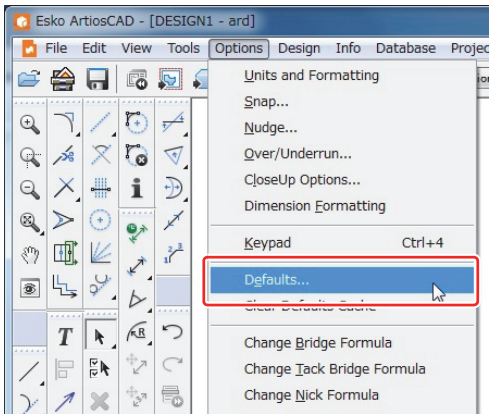
Editing Subtype List

Even if the same line type, you can tell one from the other by setting subtype.
Also, you can name the subtypes as you wish, so that you won't miss when selecting the subtype you want to choose.

♦ Only when the output type is CAM, you can output by subtype. Manage your tool or output order by subtype using CAM Tooling Setup Catalog.

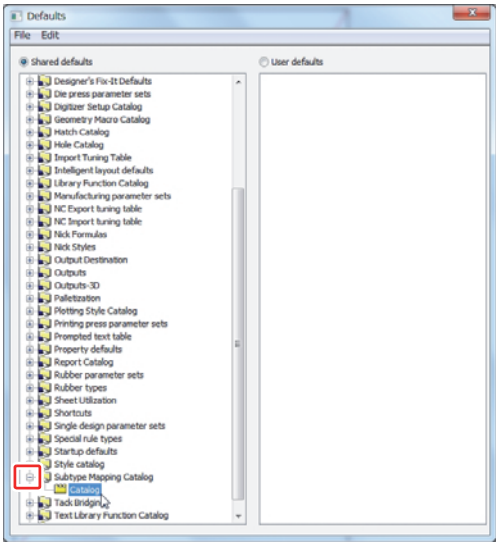
1 Select [Defaults...] in the [Options] menu.

- The [Defaults] window opens.

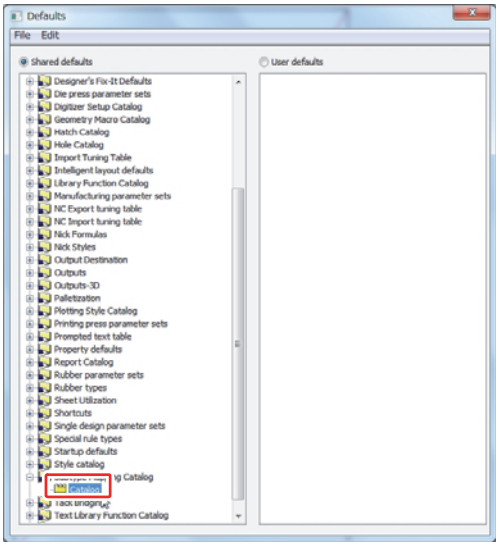


2 Click the [+] on the left of [Subtype Mapping Catalog] folder icon on the Shared default.

- The contents of the [Subtype Mapping Catalog] folder is displayed.

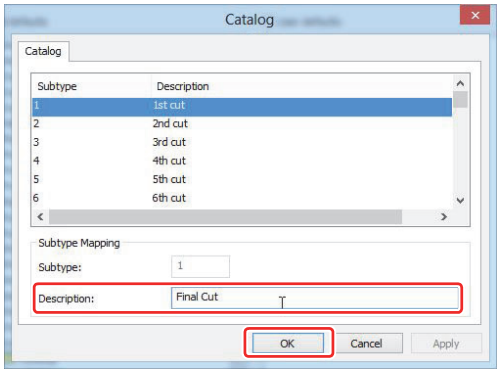


3 Double-click the [Catalog].



4 Set the name of the selected subtype.

- This is the name displayed when setting the subtype for the line type of design data. Make sure that name it clearly.

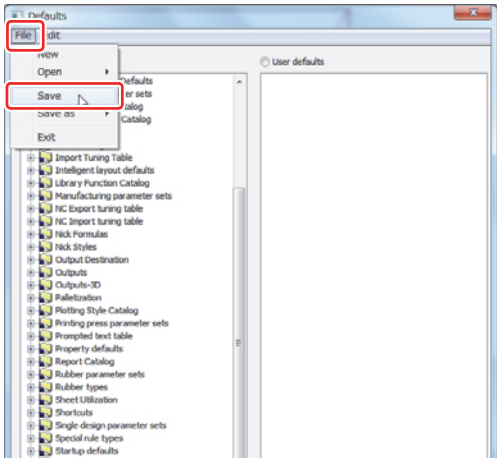


5 Click OK.

- Closing the window by clicking [x] button cancels the settings you made so far.

6 Click [File] - [Save].

- The shared default is saved and the setting of CAM Tooling Setup Catalog is complete.



Setting the subtype for a line

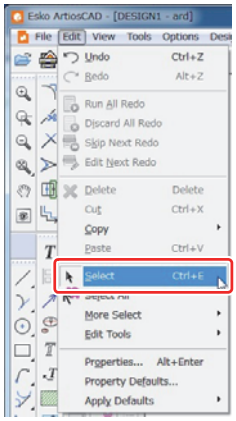
You can distinguish a line type from the other one by setting subtype to the line type.
Use this function to change the cutting order or cutting count even if for the same line type by using CAM Tooling Setup Catalog.

♦ You can manage the tool or output order for each subtype by using CAM Tooling Setup Catalog.
♦ Subtype can be set and confirmed while designing process.

NOTE!	♦ Only when the output type is CAM, you can output by subtype.

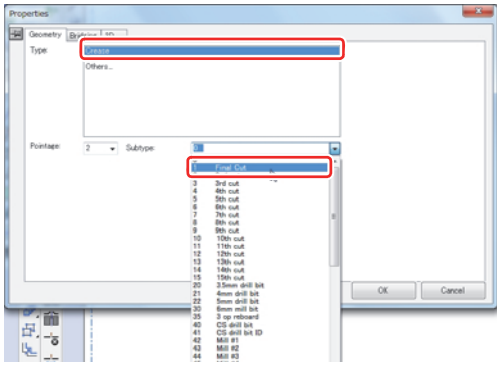
1 **Click the [Select] icon in the toolbar.**

- You can also select by clicking the [Edit] menu, [Select].



2 **Double-click the line you want to chage the subtype.**

3 **Select a subtype from the list.**



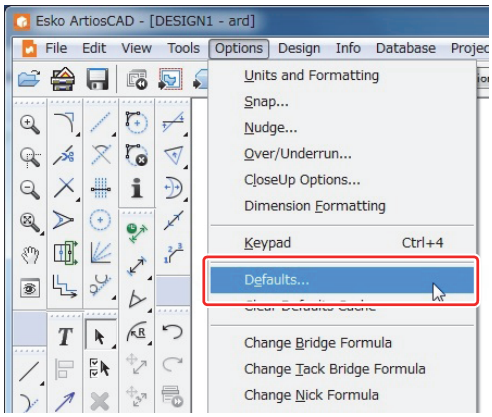
4 **Click OK when the setting is complete.**

Creating the special line type

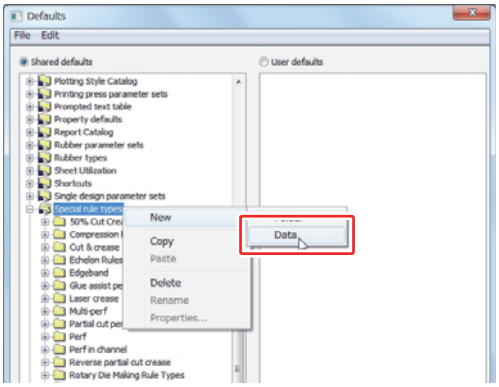
You can create and register a new line type, such as a lead crease line specified the length of crease and cut line. The registration procedure is described below, taking an example from the line type used as the cut line printed at the last of the process.

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

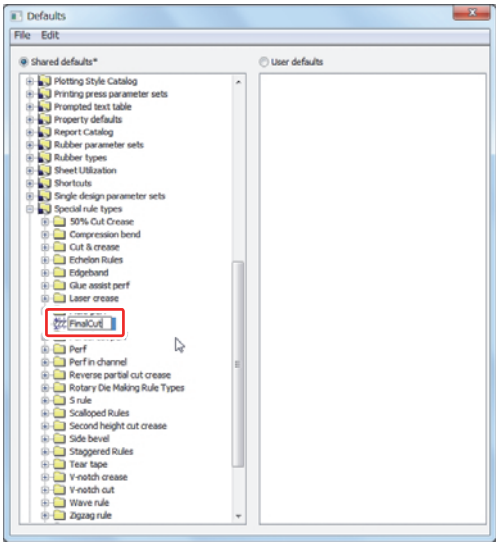
- The [Defaults] window opens.



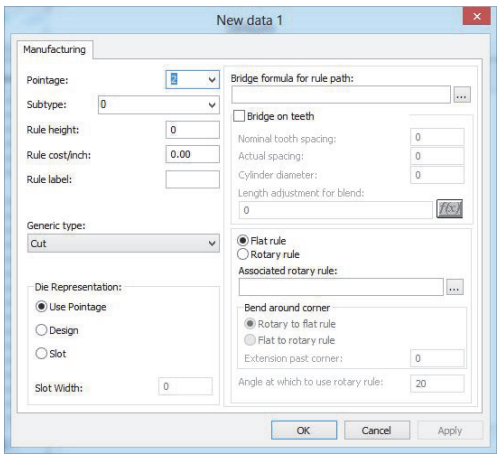
2 **Right-click [Special rule types], and select [New] and [Data].**



3 **Enter the name for the newly-created special rule type.**



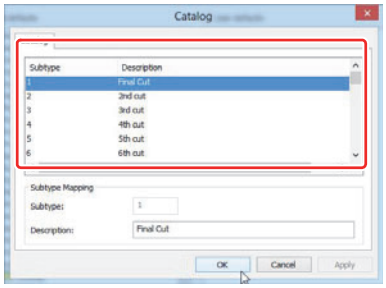
4 Double-click the special rule type and open the property window.



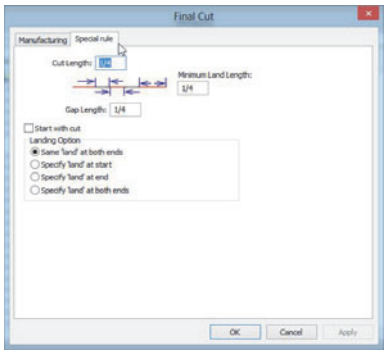
5 Make settings for "Subtype" and "Generic type".

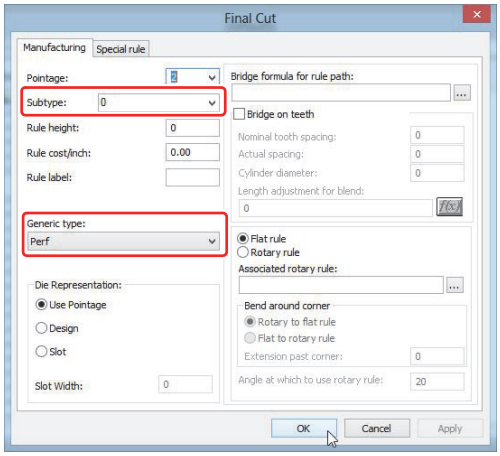
- Click "Subtype" and "Generic type" and select the line type you want to create.
- In this case, you'll set the cut line output at the last. Select "15" for subtype and [Cut] for generic type.

♦ The list displayed by clicking "Subtype" is defined in the [Default] - [Subtype Mapping Catalog] - [Catalog]. (→ P.1-40)



♦ If [Lead Crease] is selected in the generic type, the [Special rule] tab is displayed. In this tab, you can make the settings concerning the selected generic type shape, such as the length of the crease line and cut line.



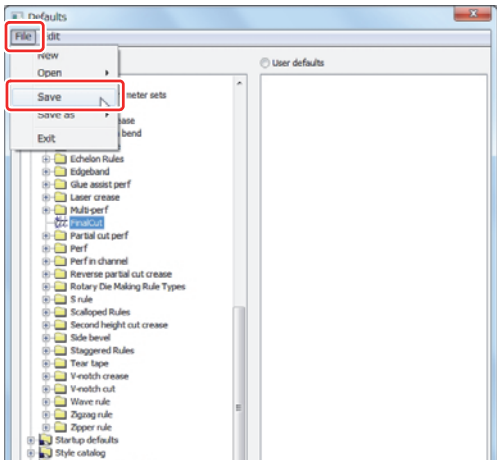


6 Click OK when the setting is complete.

- Closing the window by clicking [x] button cancels the settings you made so far.

7 Click the [File] - [Save].

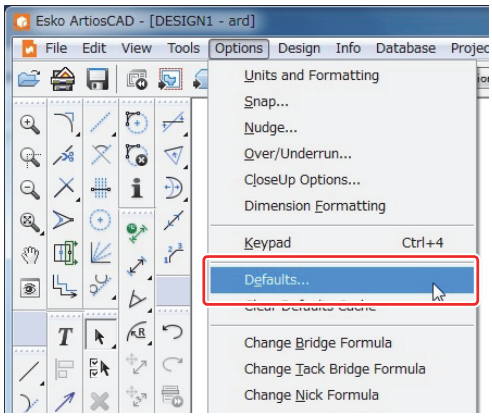
- The shared default is saved and the setting for the special rule is complete.



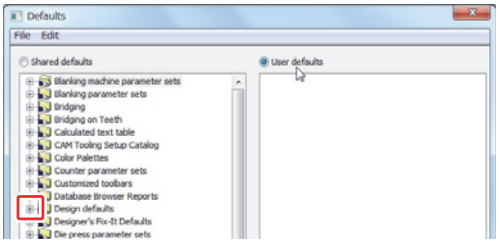
Changing the display of the design screen

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

- The [Defaults] window opens.



2 **Click the [+] on the left of [Design defaults] folder icon.**

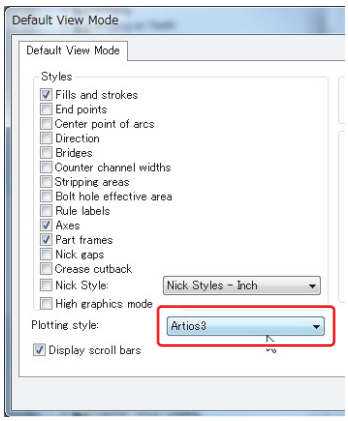


3 **Double-click the [Default View Mode] folder icon.**

- The Default View Mode window is displayed.

4 **Select "Plotting style".**

- Refer to P.2-17 “Configuring a Plotting Style Catalog” for setting the plot style catalog.



Checking the Created Data

Even if the created data appears to be flawless on screen, any of the following problems might have developed (an example).

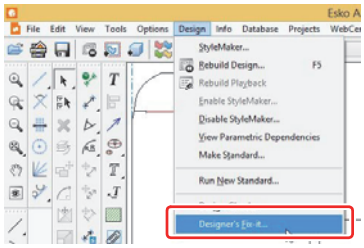
- Lines that appear to be joined are actually separated from each other.
- A line that looks like one line is actually composed of two lines, one on top of the other.

The following explains how to identify and correct a problem hidden in a created drawing.

Identifying Where a Problem Occurred

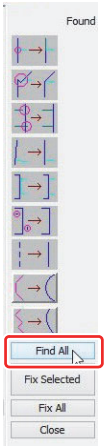
This section describes how to identify a problem in a drawing.

1 Select [Designer's Fix-it...] in the [Design] menu.



2 Detect problems from a drawing.

- Click the [Find All] button from the menu displayed at the right corner of the window.
- Click the problem you want to detect, and you can search for that problem only.
- The problems below can be detected.



● Problems that can be detected

You can specify a value that can be set regarding each problem at the bottom of the window.

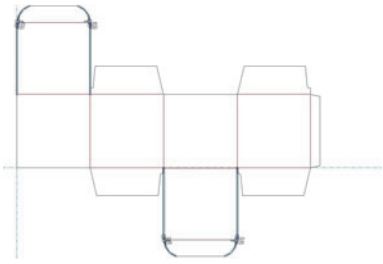
Icon	Problem name	Settable value(s)	Description	Correction
	Intersecting point on lines Intersecting point	None	Lines intersect.	The portion where the lines overlap each other is deleted and the remaining portion is divided into two line segments at the intersecting point.
	Confluence point	Size	Multiple lines do not converge at one point. If the deviation of the end point of each line is equal to or smaller than [Size], it is detected as a problem.	Lines will converge at one point.
	Overrun*1 Underrun*2	Size Minimum angle	An overrun or underrun occurred. If the distance between end points is equal to or smaller than [Size], and lines intersect at an angle greater than [Minimum angle], it is detected as a problem.	The lines lengthen or shorten up to a position in which they contact each other without going beyond the intersecting point.

	Nearly horizontal Nearly vertical	Size Maximum angle	Nearly horizontal (vertical), but slightly not horizontal (vertical). If the line length is equal to or greater than [Size], and the angle deviated from the horizontal (vertical) is equal to or smaller than [Maximum angle], it is detected as a problem.	Correction of this problem cannot be performed through Designer Adjustment. Correct the problem manually. Select the [Tools] menu, [Adjust Outline], and [Make Line Horizontal / Vertical], and click the line you want to correct.
	Double line	Size Maximum angle	Two lines overlap each other completely. Alternatively, two lines are nearly in parallel with each other and only slightly apart from each other. If the line length is equal to or greater than [Size], and the angle between the two lines is equal to or smaller than [Maximum angle], it is detected as a problem.	Delete either of the overlapping lines.
	Short line Size	Size	A very small line not related to the design is drawn. If the length of one line is equal to or smaller than [Size], and the line is not joined to another line, it is detected as a problem.	Delete small lines.
	From line to arc	Size	An arc-like line seems to be drawn, but it is actually a group of straight lines. If a group of straight lines that looks similar to an arc is composed of straight lines, each equal to or smaller than [Size], it is detected as a problem.	Redraw the relevant group of straight lines as one arc.
	Smooth line	Size Smoothing limit	Formed by many straight lines, a straight line or arc is not smooth. If each of the very small lines constituting some line is equal to or smaller than [Size], it is detected as a problem.	Redraw a straight line or arc formed by a group of very small straight lines as a smooth curved line or smooth straight line. There might be a deviation within the range of [Smoothing limit] between the original line and the line redrawn smoothly.

*1. Some line slightly extends beyond an intersecting point with another line.
*2. The end of some line slightly fails to reach the location where that line intersects with another line.

3 The problem detection operation is completed.

- When the problem detection operation is completed, the number of problems that occurred is displayed at the right side of each icon.
- Click the icon to check where the problems occurred.

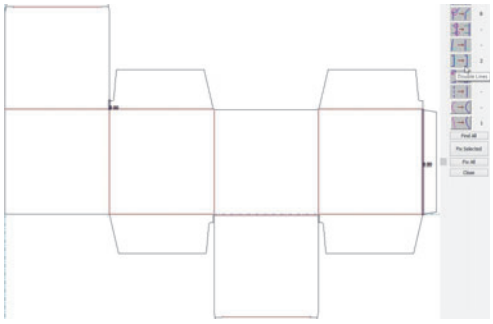


Correcting Where a Problem Occurred

This section describes how to correct a problem that occurred in a drawing.

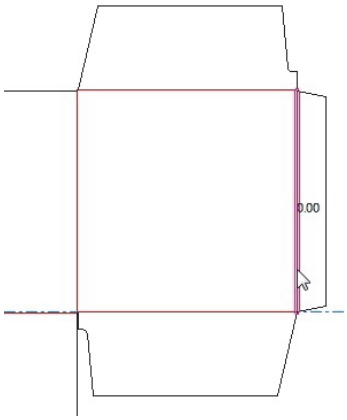
1 **Click the icon for the problem you want to correct, and show where the problem occurred.**

- Identify where the problem exists by referring to P.1-47 "Identifying Where a Problem Occurred".



2 **Select the problem you want to correct by clicking.**

♦ You can select multiple problems by clicking while holding down the [Shift] key.

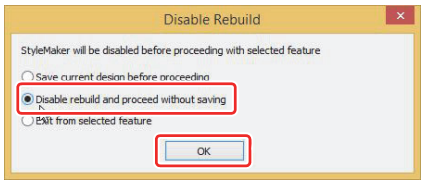


3 **Click [Fix Selected] button.**

- The [Disable Rebuild] window appears.

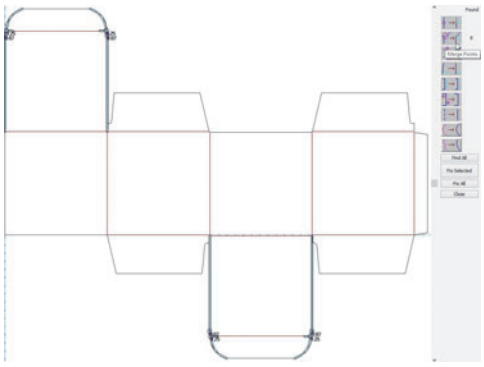
4 **Select [Disable rebuild and proceed without saving] and click OK.**

- The problem correction operation is completed.



● To collectively correct problems

1 **Click the icons for the problems you want to correct, and show where the problems occurred.**



2 **Click [Fix All] button.**

- The displayed problems have all been corrected.

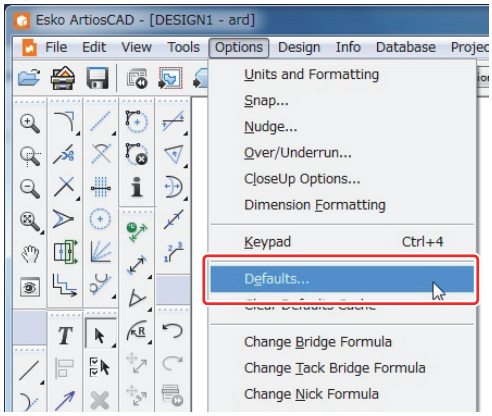
Display the Dimensional Values on a Design

Setting a Dimensional Data Environment

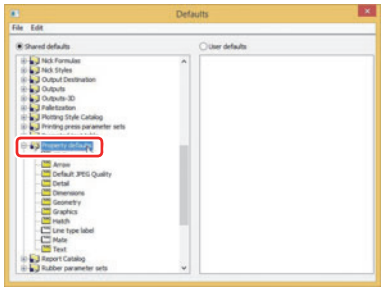
You can input a distance and angle in a drawing as dimensional data.
Here, set an environment for dimensional data such as the color of characters and the shape of an arrow on a drawing.

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

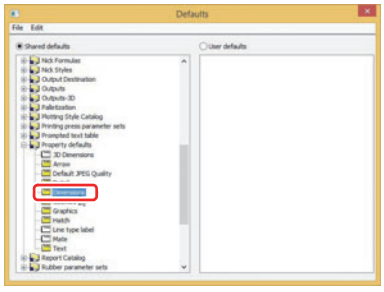
- The [Defaults] window opens.



2 **Select [Property defaults] in [Shared defaults] and click [+] on the left to display a list.**

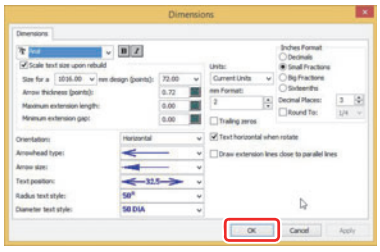


3 **Double-click [Dimensions].**



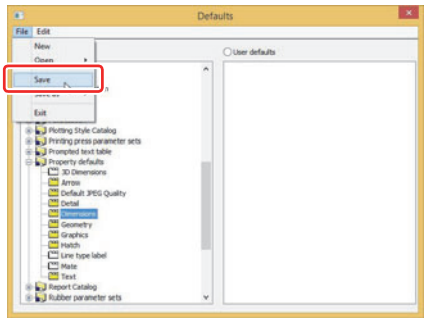
4 **Set the dimension display style.**

- When the setting operation is completed, click OK to close the window.



5 Save the dimensional display style set.

- Select [Save] in the [File] menu to save the data and close the [Defaults] window.

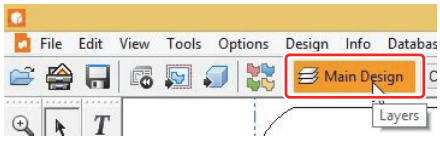


Before Starting Dimension Measurement

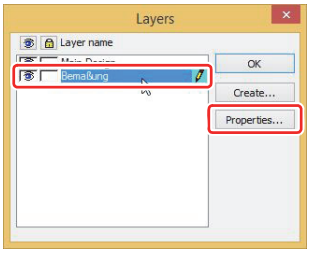
This section describes the items to be checked before starting dimension measurement and how to respond when a message appears.

1 Click the [Layers] icon at the window's top.

- Displayed next to the [Layers] icon is the name of the layer you are currently writing data to.

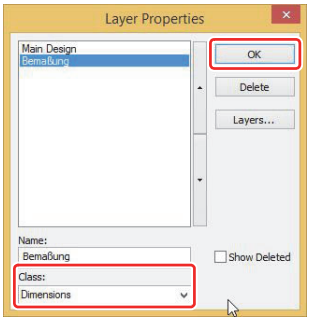


2 Select the layer you want to check the information of and click the Properties... button.

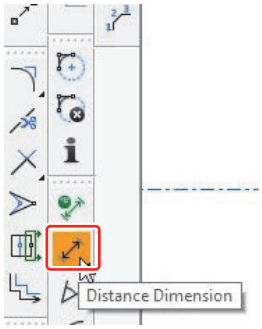


3 Check the [Class] item.

- If [Dimensions] is displayed, you can write dimensional data into the selected layer.
- When the checking operation is completed, click OK to close the [Layer Properties] window.



4 Select a dimension measuring tool.

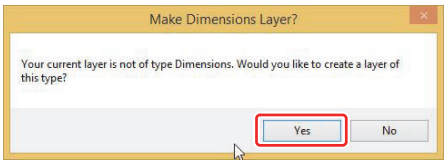


♦ If a message appears when a dimension measuring tool is selected.
When the current layer is a dimension layer.
→ Proceed to step 7.
When the current layer is not a dimensional layer, but a dimension layer exists.
→ Proceed to step 6.
When no dimension layer exists. → Proceed to step 5.

♦ For details about how to check a dimension layer, check steps from 1 to 3.

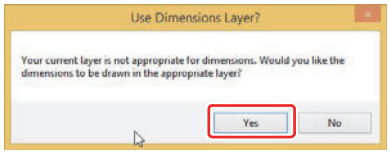
5 Create a dimension layer.

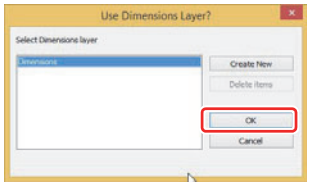
- Click the Yes button, create a layer, and then proceed to step 7.



6 Select a dimension layer.

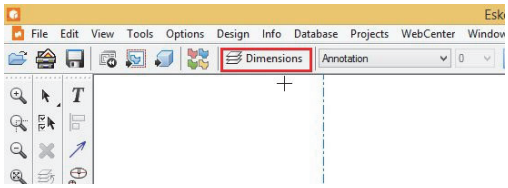
(1) Click the Yes button.
(2) Select the layer you want to write dimensional data to and click OK.





7 Check that the [Dimensions] layer is selected.

- The layer name might be different from the above.

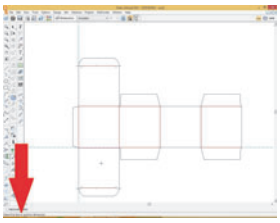


Measuring a Dimension between Straight Lines

The following distances are measured here.

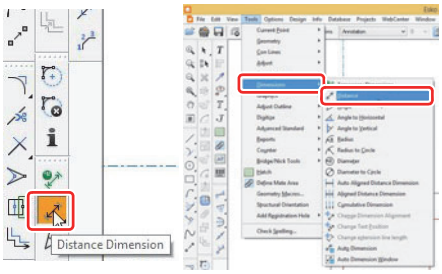
- Straight-line distance from one point to another.
- Distance from one line segment to another.

♦ When drafting by using ArtiosCAD DS, operation guide information is displayed at the bottom left of the window as reference.

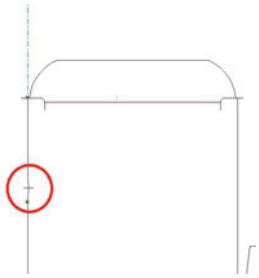


1 Click the [Distance Dimension] icon in the tool-bar.

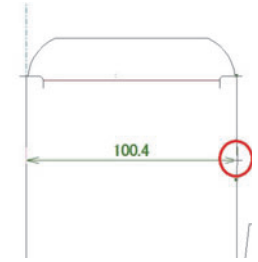
- You can also select by clicking the [Tools] menu, [Dimensions], and then [Distance].



2 Click the start point or line of the area you want to measure the dimension of.

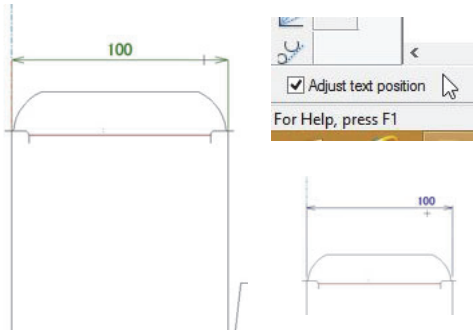


3 Click the end point or line of the area you want to measure the dimension of.



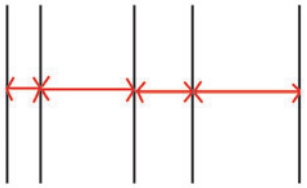
4 Click the position in which you want to display the measured dimensional data value.

- If the [Adjust text position] checkbox in the bottom left is selected, the display position for the number portion of the dimensional data value can be determined together.
- The dimensional data is displayed in the clicked position.

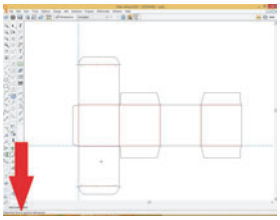


Measuring Dimensions between Straight Lines Arranged in Line

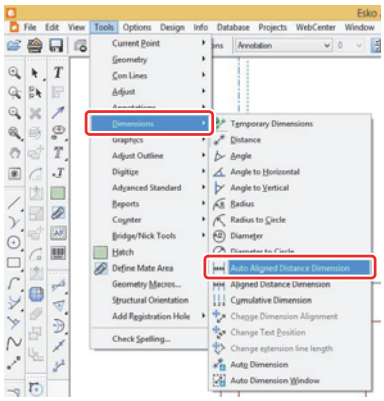
This section describes how to measure several distances between straight lines at one time as shown in the figure.



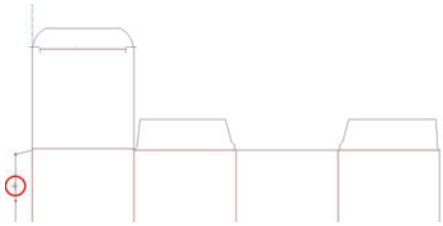
♦ When drafting by using ArtiosCAD DS, operation guide information is displayed at the bottom left of the window as reference.



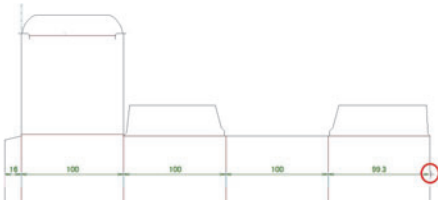
1 Click the [Tools] menu, [Dimensions], and then [Auto Aligned Distance Dimension].



2 Click the start point or line of the area you want to measure the dimension of.

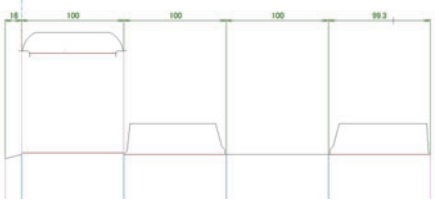


3 Click the end point or line of the area you want to measure the dimension of.



4 Click the position in which you want to display the dimensional data value.

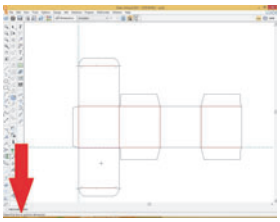
- The dimensional data is displayed in the clicked position.



Measuring the Dimension of Angle between Two Straight Lines

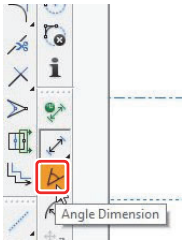
This section describes how to measure the angle between two straight lines.

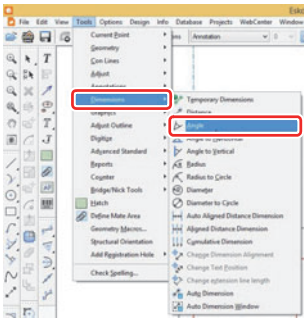
♦ When drafting by using ArtiosCAD DS, operation guide information is displayed at the bottom left of the window as reference.



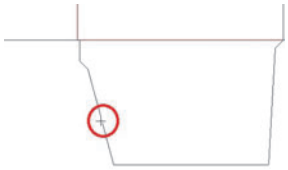
1 **Click the [Angle Dimension] icon in the toolbar.**

- you can also select by clicking the [Tools] menu, [Dimensions], and then [Angle].

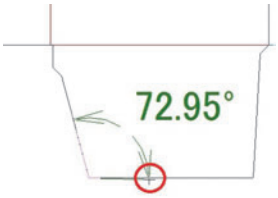




2 **Click the initial side of the area you want to measure the dimension of.**

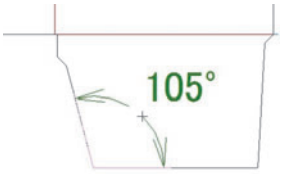


3 **Click the terminal side of the area you want to measure the dimension of.**



4 **Click the position in which you want to display the dimensional data value.**

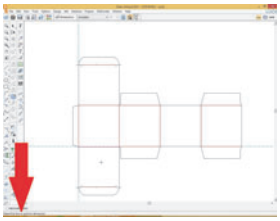
- The dimensional data is displayed in the clicked position.



Measuring the Radius Dimension of an Arc

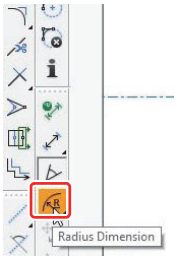
This section describes how to measure the radius of an arc or circle.

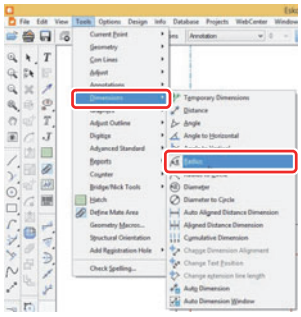
♦ When drafting by using ArtiosCAD DS, operation guide information is displayed at the bottom left of the window as reference.



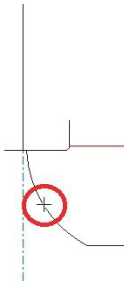
1 **Click the [Radius Dimension] icon in the toolbar.**

- You can also select by clicking the [Tools] menu, [Dimensions], and then [Radius].



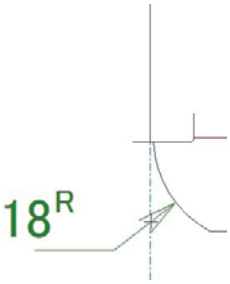


2 **Click the arc you want to measure the dimension of.**



3 **Click the position in which you want to display the dimensional data value.**

- The dimensional data is displayed in the clicked position.

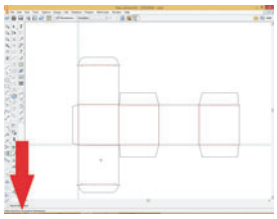


Designing the Surface of a Box

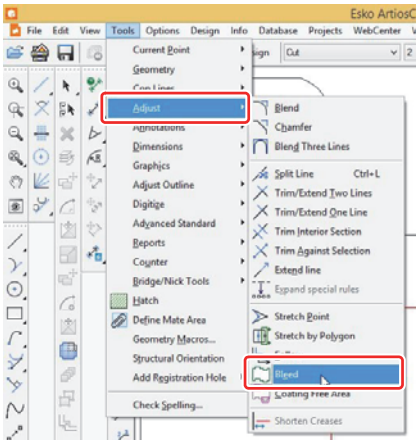
Creating a Bleed Line

If you want to place a design on a box, you must create [bleed line], which indicates the range in which a design can be placed.
By opening ArtiosCAD DS data (.ard format) on Illustrator and using a bleed line, you can clip design data placed on that data, too. (→P.1-59)

♦ When drafting by using ArtiosCAD, operation guide information is displayed at the bottom left of the window as reference.



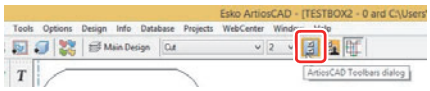
1 Select the [Tools] menu, [Adjust], and [Bleed].



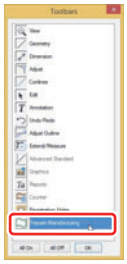
- Alternatively, click the [Bleed] icon in the [Prepare Manufacturing] toolbar.

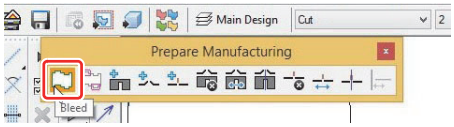
If the [Prepare Manufacturing] toolbar is not displayed

1. Click the [ArtiosCAD Toolbars dialog] icon at the window's top.

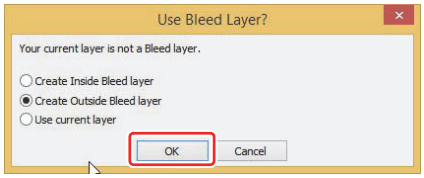


2. Click the [Prepare Manufacturing] icon.
   - Displays the [Prepare Manufacturing] toolbar.
3. Click OK to close the [Prepare Manufacturing] window.





2 Select [Create Outside Bleed layer] and click OK.



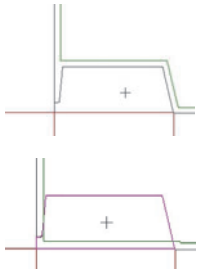
- When the current layer class is either [Inside Bleed] or [Outside Bleed], this window does not appear.
  How to check the layer class
  →P.1-52"Before Starting Dimension Measurement"

3 Set the bleed line range.

- Set the [Offset] value at the bottom left of the window.

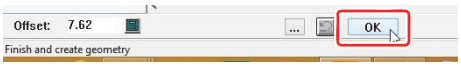
4 Remove the unneeded area from the bleed line range.

(1) Click where you do not place any design.
(2) The bleed line range will be changed.



5 When the range setting operation is completed, click OK at the window's bottom.

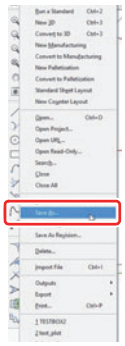
- A bleed line is created.



Using a Bleed Line on Illustrator

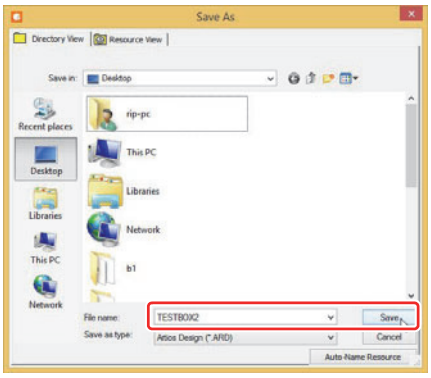
This section describes preparations for opening and editing ArtiosCAD DS data on Illustrator.

1 Select the [File] menu and then [Save As...] to save the drawing in which a bleed line has been created.



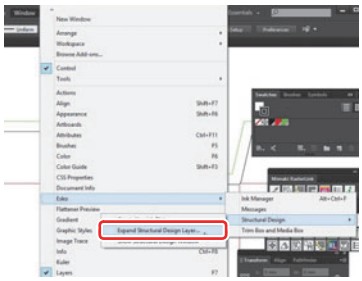
2 Save by specifying the save destination and file name.

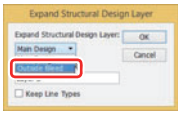
- Before saving, check that [Save as type] is set to "Artios Design (*.ARD)".
- When the setting operation is completed, click the [Save] button to save the data.



3 Edit data on Illustrator.

- A created bleed line is stored in a bleed line layer.
- To read data onto Illustrator and work on it, expand a bleed line layer in the [Expand Structural Design Layer] menu.
- Through expansion, you can perform such operation as embedding design data.
- For details about the expansion procedure, refer to page 14 in [CONNECTION GUIDE].





Chapter 2
Plotting

The Flow of Creating a Box

Configure the Environment

You can select to use one of three printing types in ArtiosCAD DS (CAM, plot and sample) to design and output a box.
Check the separate “Connection Guide”beforehand and perform “Default file management”.P.2-3
Setting “Default file management” allows you to select any of the printing types.

When Using the Windows Driver

- You can set the color for each line type and cutting conditions for each color.
- You can output in the line style set in the plotting style catalog.

NOTE!
- Cutting accuracy is inferior to that of CAM driver output.
- Stroke output of text is not possible.

When Using the CAM Driver

- You can set the cutting conditions for each tool used.
- The cutting accuracy is superior to that of the Windows driver.
- Stroke output of text is possible.

NOTE!
- You cannot output in the line style set in the plotting style catalog.

Select the Output Type

• When you want to use simple output settings • 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
Select “Plot”.	**Select “CAM”.**	**Select “Sample”.**

If “Plot” or “CAM”

Set by using ArtiosCAD DS.

1. **Set the cut direction and sequence.**
   - For “Plot”, refer to P.2-24 “Set the cut direction and sequence in "Sequence".”.
   - For “CAM”, refer to P.2-7 “Configuring a CAM tooling setup catalog”.
2. **Set tools and line colors. (If using plot output)**
   - Refer to P.2-17 “Output type: Plotting configuration”.

If “Sample”

Set by using ArtiosCAD DS.

1. **Create sample line types.**
   - Refer to P.2-26 “Creating the sample line type”.
2. **Set tools and line colors for each sample line type.**
   - Refer to P.2-22 “Output type: Sample configuration”.

When using the Windows driver

When using the CAM driver

Set the cutting conditions for each tool.
- Refer to P.2-11 “NC Output Tuning Table”.

Set the output.
- Refer to P.2-29 “Output Configuration”.

Set the cutting conditions for each line color.
- Refer to P.2-27 “Setting the cutting conditions by using the Windows driver”.

Perform output.
- Refer to P.2-34 “Output in ArtiosCAD DS”.

Managing Defaults

What is Defaults?

♦ The defaults includes the all settings for ArtiosCAD DS 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 DS.

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.

NOTE!	♦ 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 DS.

♦ A part of the settings can be selected and saved as a file.
(→ P.2-3 “Saving the settings of the defaults”)

♦ You can import the saved defaults file to apply the setting contents.
(→ P.2-4 “Importing the defaults”)

♦ If you want to change a part of the defaults settings, copy the file first, then edit it.
(→ P.2-3 “Saving the settings of the defaults”)

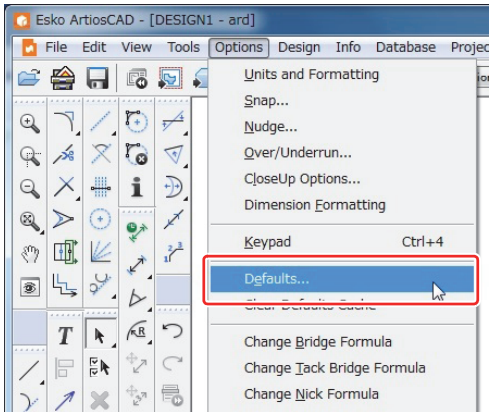
Saving the settings of the defaults

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

- If you want to backup the defaults file before updating the ArtiosCAD DS.
- 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.

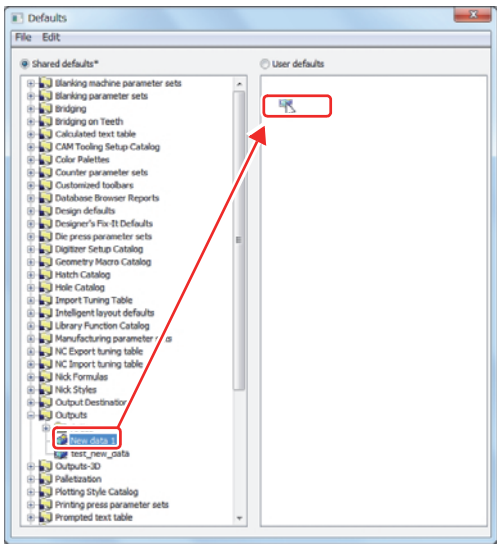


2 Select the contents you want to save from [Shared defaults] pane and copy it to [User defaults] pane.

(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.

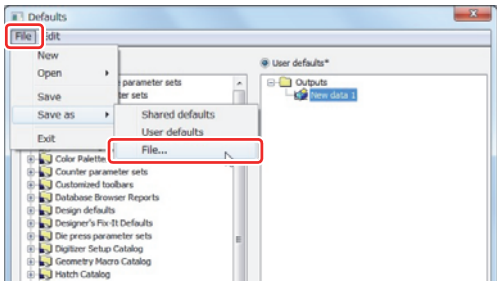
(3) Drag and drop the file you selected in the step 2 to the [User defaults] pane.



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.

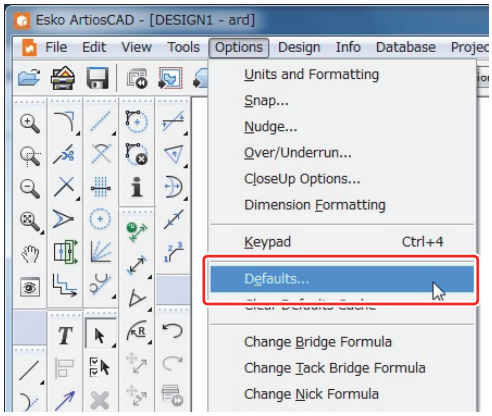


Importing the defaults

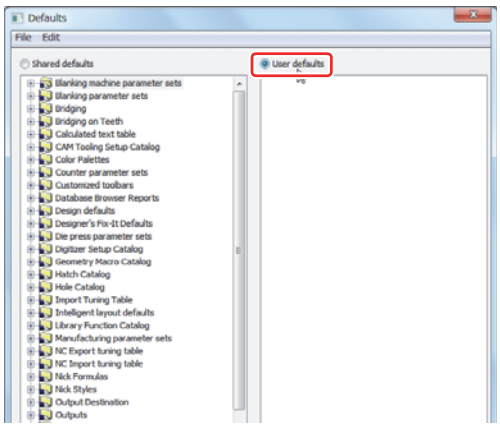
Import and use the defaults file you saved beforehand in the following cases;
- If you want to use the defaults file set for the "Mimaki Plotter" released by Mimaki.
- If you want to use the backup defaults file before updating the ArtiosCAD DS.

NOTE!	♦ Mimaki offers defaults files set for the Mimaki plotters. Make sure to import and use the defaults files we offer if you output using the CAM driver. ♦ Please contact our sales for availability of the defaults files.

1 Select [Defaults...] in the [Options] menu.
- The [Defaults] window opens.

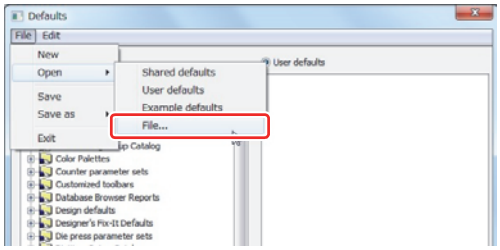


2 Click the [User defaults] radio button to ON.



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

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

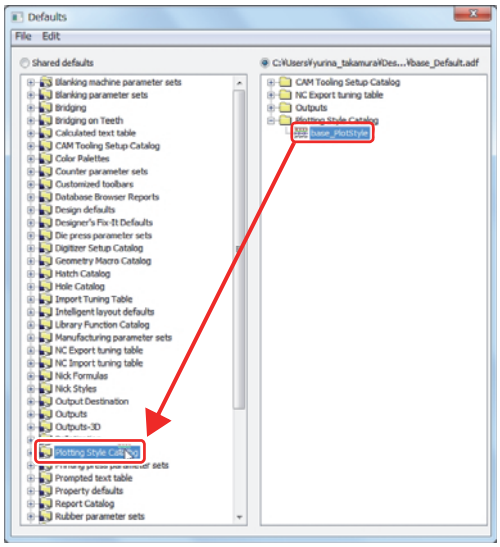


4 Open the file in the [User defaults] pane and copy it to the [Shared defaults] pane.

(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.

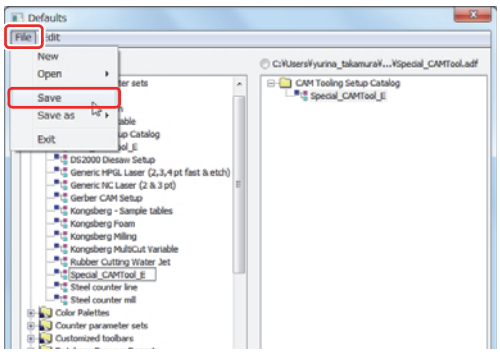


NOTE!	♦ If you do not want to overwrite the defaults data, change the file name in the [User defaults] pane first, then copy it to the [Shared defaults] pane. Please note that the software may not work properly as you set if the defaults data name has been changed. ♦ Changing the defaults data name in 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.

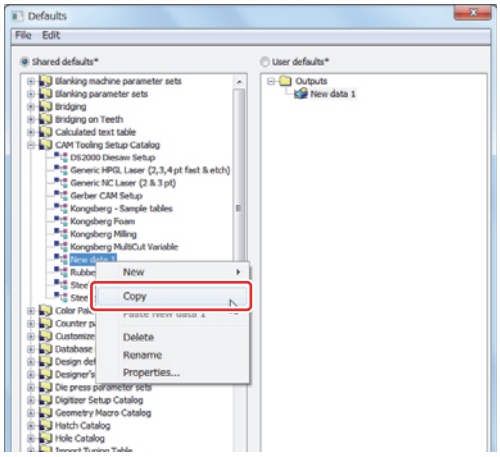


♦ After editing the defaults file, click [Option] - [Clear default cache] to apply the latest settings without re-starting the ArtiosCAD DS.

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].



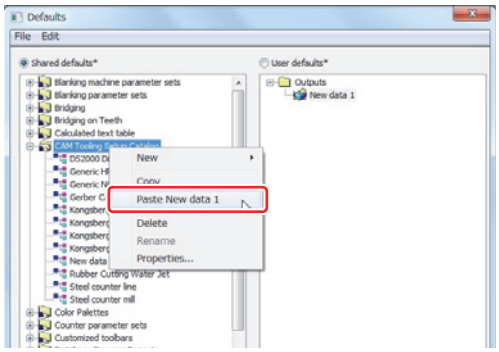
2 Right-click the folder which includes the copied defaults data, select [Paste].

- The copied file is created.

NOTE!	♦ Paste the selected defaults data in the same folder. You cannot paste it to another folder.

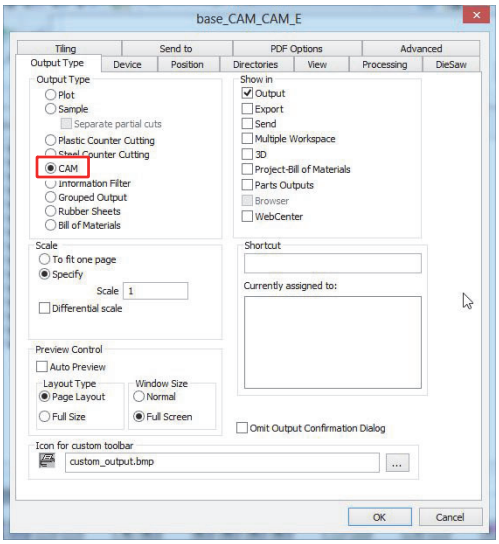
♦ If you want to change the name of the copied defaults data.

1. Right-click the copied defaults data.
2. Select [Rename].
3. Input the fine name.



CAM Tooling Setup Catalog

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



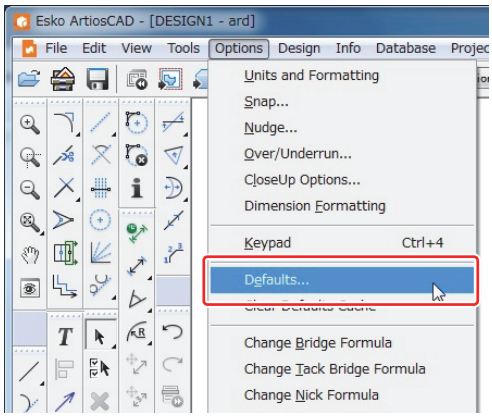
Settings configured by using the CAM tooling setup catalog

- ♦ 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.

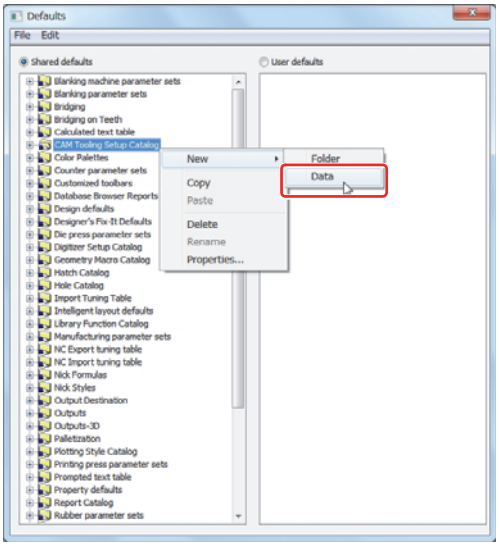


2 Click the [+] symbol on the left side of the [CAM Tooling Setup Catalog] folder.

- The contents of the [CAM Tooling Setup Catalog] folder appear.
- If you do not want to create a new CAM tooling setup catalog, proceed to step 5.

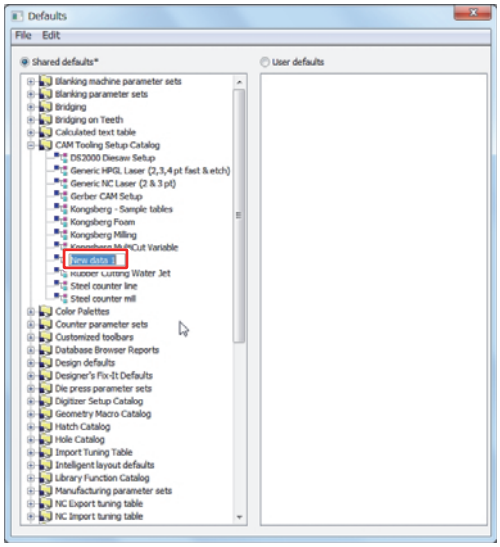
3 Right-click the [CAM Tooling Setup Catalog] folder, and then select [New] and [Data].

- A new CAM tooling setup catalog is created.



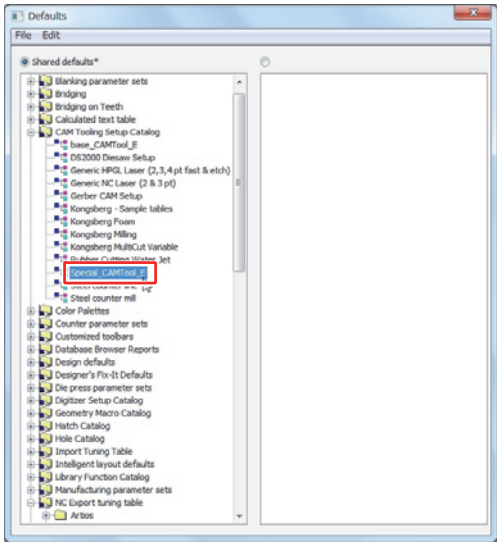
4 Naming a CAM tooling setup catalog

- Use half-width alphanumeric characters for the name.

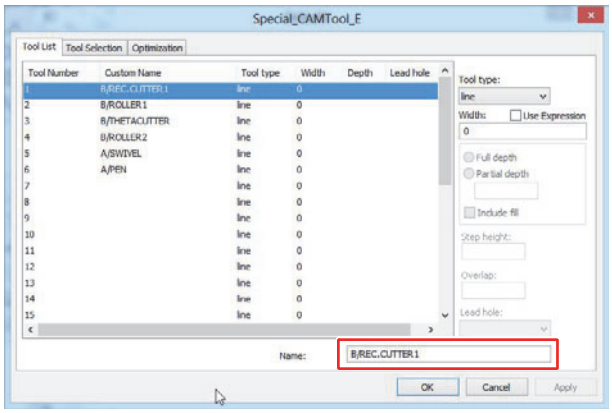


5 Double-click the CAM tooling setup catalog that you want to edit.

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



6 Editing a CAM tooling setup catalog

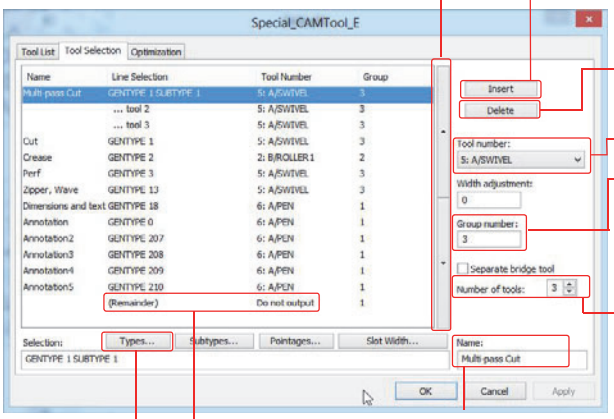
	Description	Comments
[Tool List] tab	You can specify a name for each tool number. 	• To input a name, click on the tool you want to edit and input the name in the [Name] field outlined in red. (It is useful to register a tool name for each pen number.)

[Tool Selection] tab *1

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)

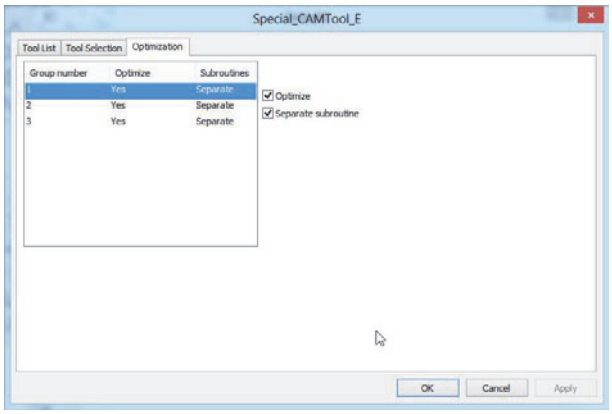
You can specify a name for each line type.
Inputing line type names makes it easier to understand the line types later.

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)

[Optimization] tab

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.



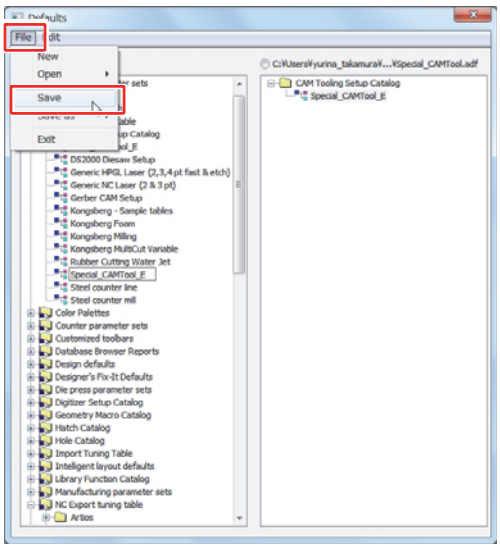
*1. (1) If there are two or more line type settings, the setting at the top is enabled and all other settings are disabled.
The cutting sequence is not affected if the display is moved.
(2) If there is a line type that is not output, select either “Do not output” or “Size only” for the [Tool no.].
When “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 *”.

7 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.

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

- This completes configuration of the CAM tooling setup catalog.



NOTE!	♦ You need to configure the plotting style catalog when using Windows driver output. (→ P.2-26 “Output type: Selecting CAM”)

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>>

Output is performed in the following sequence (output by each path): TypeA (Tool 2)↴↳ Type A (Tool 5) ↴↳ Type A (Tool 6)
##No translation##

♦ **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: 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.2-24 “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 Output Tuning Table

The NC output tuning table is used for setting the tool output conditions (such as speed and pressure) used with CAM driver output.
Prepare multiple NC output 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.

NOTE!	♦ Be sure to import the settings provided by Mimaki for using NC output tuning tables. ♦ Contact the corresponding sales personnel for the procedures for obtaining NC output tuning tables.

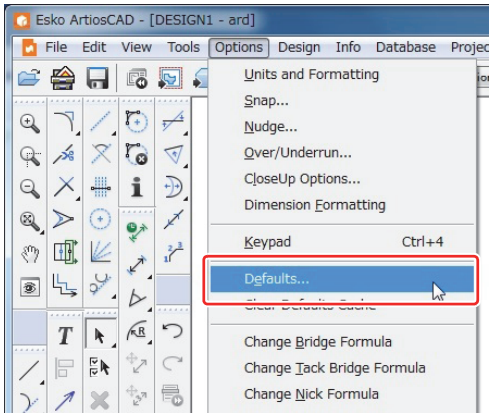
Configuring an NC Output Tuning Table

1 Import an NC output tuning table provided by Mimaki.

- For importing an NC output tuning table, refer to P.2-4 “Importing the defaults”.

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

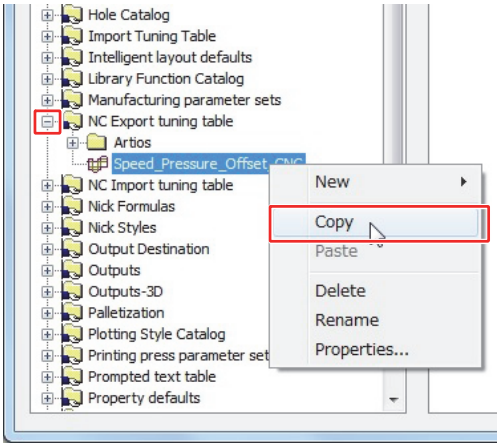
- The [Defaults] window opens.



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

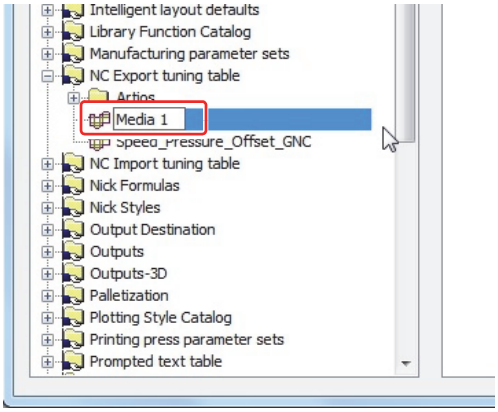
(1) Click the [+] symbol on the left side of the “NC output tuning table” folder under “Shared defaults”.
- Check the folder contents.

(2) Copy the NC output tuning table that you want to edit.
- Refer to P.2-3 “Saving the settings of the defaults” for the copying procedures.
- Be sure to copy an NC tuning table provided by Mimaki.
- Use half-width alphanumeric characters to name the copied file.



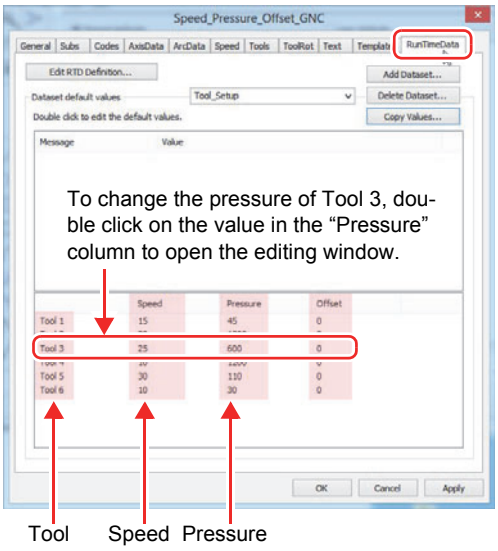
NOTE!	♦ Copy an NC tuning table according to the item you want to control as shown below. **Control only the tool speed**: Speed_GNC **Control only the tool pressure**: Pressure_GNC **Control only the tool offset**: Offset_GNC **Simultaneously control the tool speed and pressure**: Speed_Pressure_GNC **Simultaneously control the tool speed and offset**: Speed_Offset_GNC **Simultaneously control the tool pressure and offset**: Pressure_Offset_GNC **Simultaneously control the tool speed, pressure and offset** : Speed_Pressure_Offset_GNC

4 Double-click on the created NC output tuning table to open it.

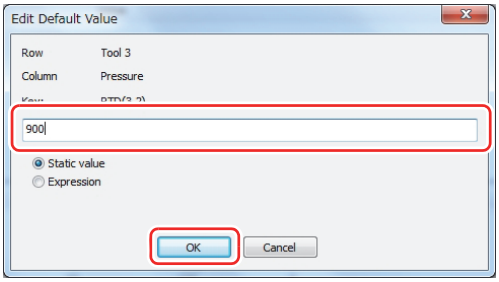


5 Click on the [RunTimeData] tab and double-click on the value you want to edit.

- The settings for tool numbers 1 to 6 are displayed in the bottom half of the screen.
  The tool numbers displayed here correspond to the pen numbers assigned by using [Pen No. Assignment] of the plotter.



6 Change the selected value and click OK.

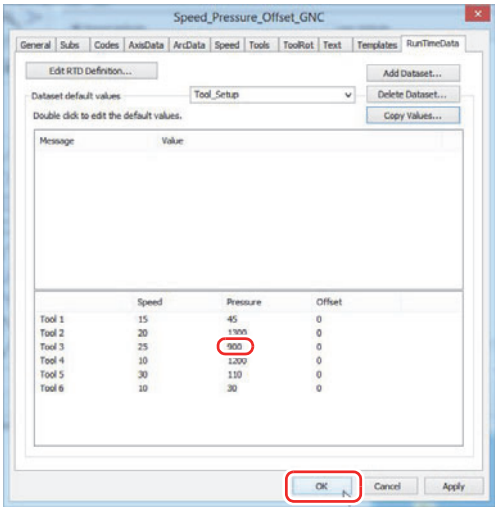


NOTE!

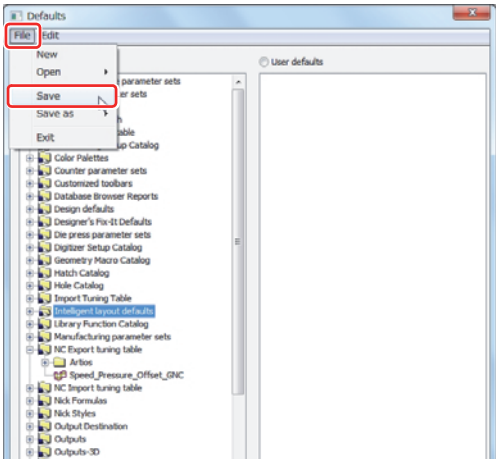
- The threshold values for the speed and pressure of each tool vary for each plotter. Set values that are outside the range of the plotter being used are automatically changed to values within the setting range.
- Clicking OK with no values input into the input field can result in unexpected problems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



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.

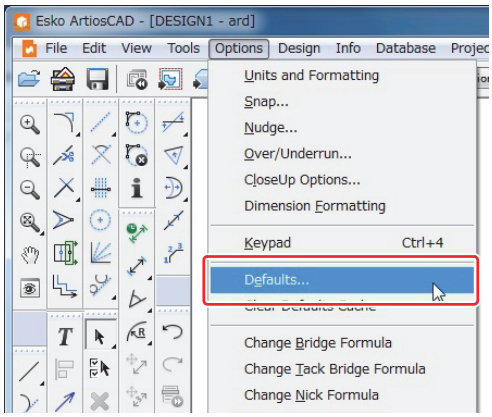
♦ The plotting style catalog includes “Design display-related settings” and “Output-related settings”.

● For settings related to design (→ Refer to P.1-46“Changing the display of the design screen”.)

● For settings related to output

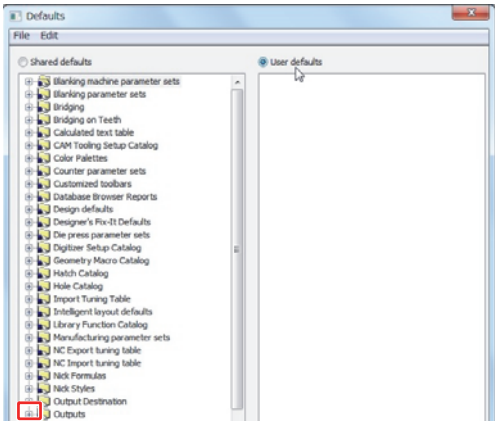
1 Select [Defaults...] in the [Options] menu.

- The [Defaults] window opens.



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

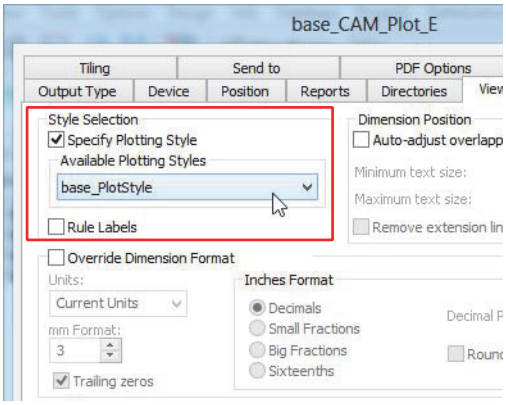
- The contents of the [Outputs] folder are displayed.



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

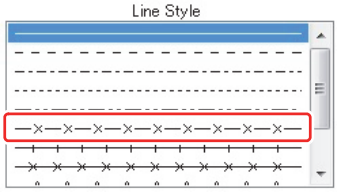
- The settings window for the selected output file appears.

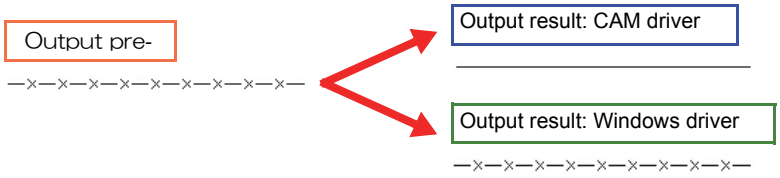
4 Double-click the [View] tab and perform “Style Selection”.



- **Output preview:**
  The line color, width and type (line style) set for each line type are displayed in the preview window.
- **Output tool:**
  [For CAM driver] Output according to the tool number set for each line type.
  [For Windows driver] Tools are set by the Windows driver for the line colors set for each line type.
- **Output style:**
  [For CAM driver] Output in straight lines with no relation to each set line type.
  [For CAM driver] Output according to the set line type (line style).

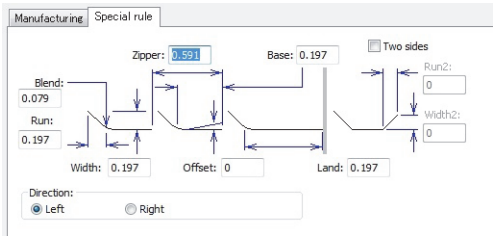
♦ Output when the [Line Type (Line Style)] set in the “Plotting Style” window is anything other than a straight line
♦ For example, the preview and output are as shown below when the line type (line style) on the right is selected.





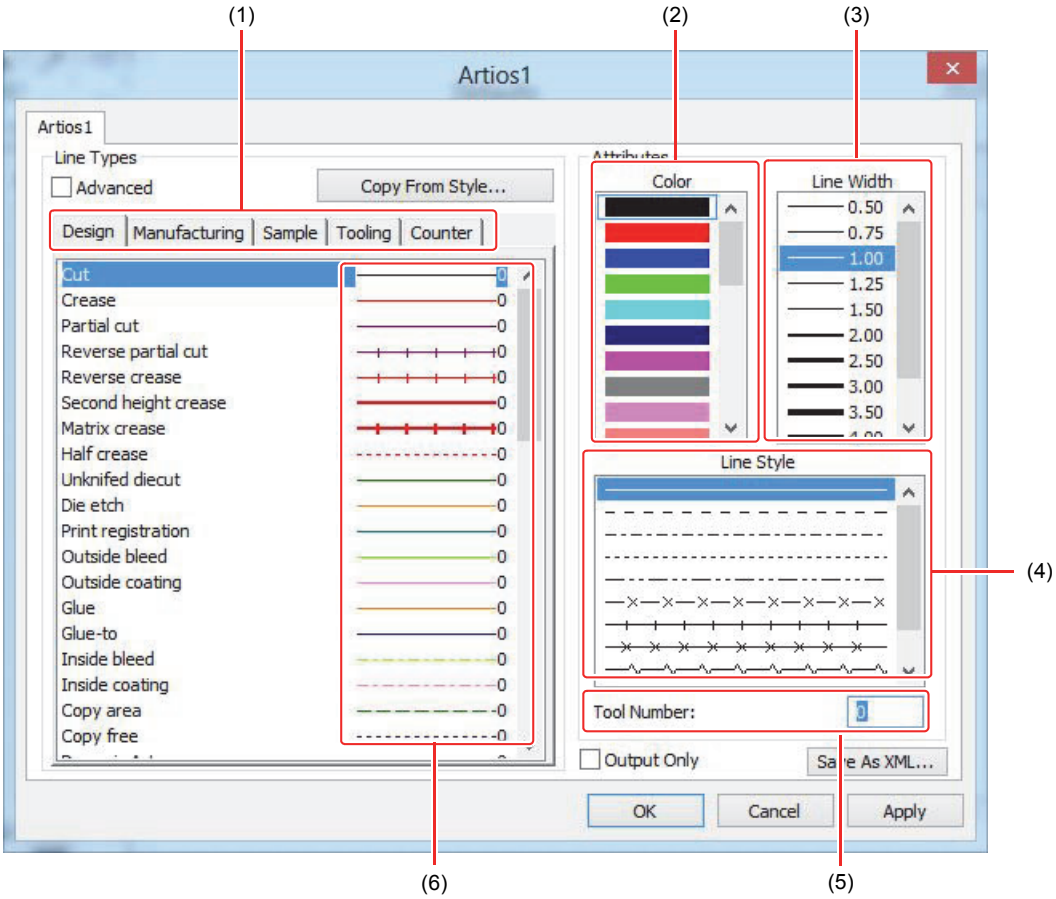
♦ Straight line output is not performed during CAM driver output in the following type of case.
♦ Straight line output is not performed during CAM driver output for line types included in [Rule type]-[Zipper rule].

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



[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 DS. 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. • Set the color for each line type if using the Windows cutting driver. Tools and cutting conditions for the set color are assigned in the driver. • 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 DS 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. • Output is according to the set line type (line style) if using the Windows cutting driver. • 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. • The tool number (pen no.) set here is the number assigned by using [Pen No. Assignment] of the cutting plotter. • Sets the tool number output for each line type if using the CAM driver.
(6)	Current setting status	Displays the line type, color and tool number set for each line type. (Currently selected item is highlighted in blue.)

NOTE! ♦ Setting items of the plotting style catalog vary depending on the driver and output type used during output.

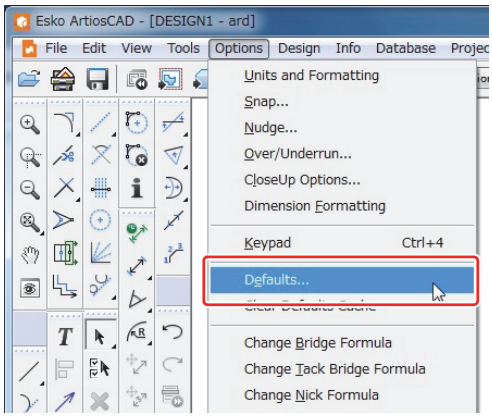
Configuring a Plotting Style Catalog

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

● Output type: Plotting configuration

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

- The [Defaults] window opens.

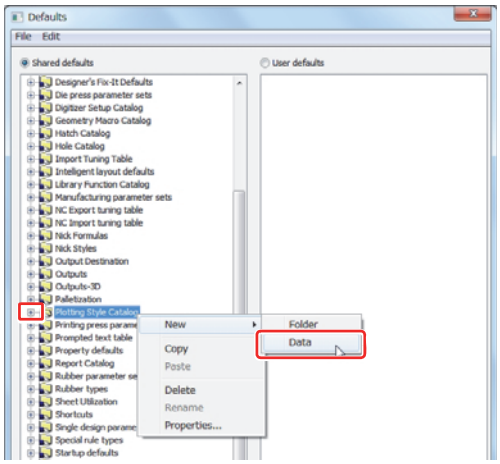


2 Click the [+] symbol on the left side of the [Plotting Style Catalog] folder.

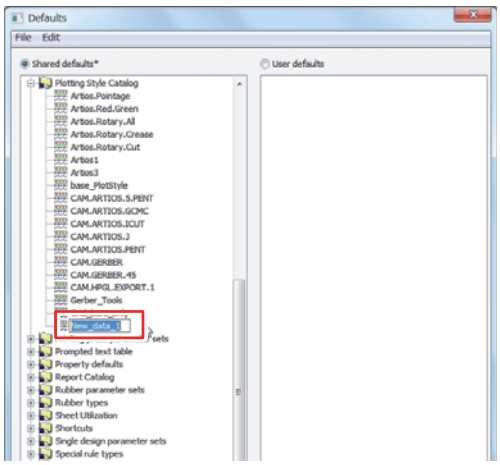
- The contents of the [Plotting Style Catalog] folder appear.
- If you do not want to create a new plotting style catalog, proceed to step 5.

3 Right-click the [Plotting Style Catalog] folder, and then select [New] and [Data].

- A new plotting style catalog is created.

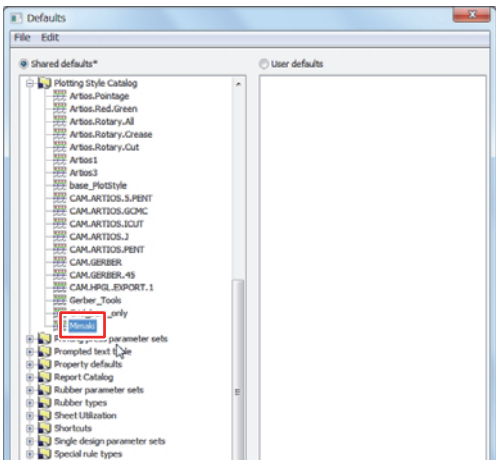


4 Name the catalog.



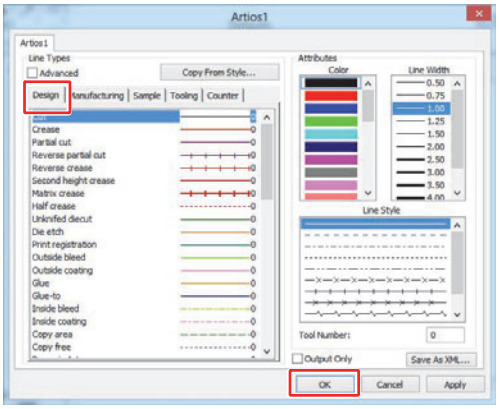
5 Double-click the plotting style catalog that you want to edit.

- Check that the [Design] tab is selected.



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

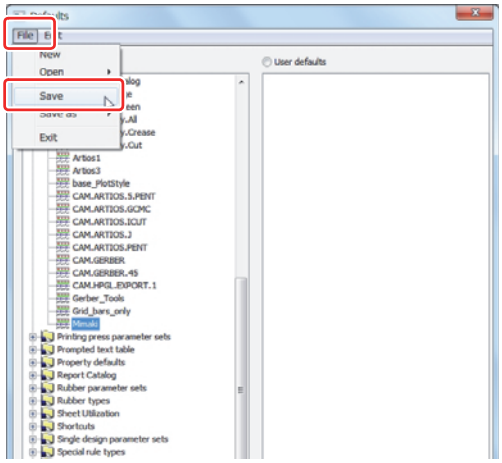
- For more detailed information regarding the line type settings, refer to P.2-16 “[Plotting Style Catalog] Window”.
- OK Clicking Cancel instead of [OK] cancels the settings you have just specified.



NOTE!	
	Output results differ depending on the output method. ♦ **When using the Windows driver** Output is performed according to the selected line style. ♦ **When using the CAM driver** You can select the line style but output is performed by using all straight lines. **When there are line types that are not output** ♦ **When using the Windows driver** Whether data output is performed cannot be controlled by using the [Design] tab of the plotting style catalog. You can set data not to be output by dividing the data into layers and switching between the display and hide layers settings. For details, refer to P.1-32 “Layer Operation”. ♦ **When using the CAM driver** The specified line type is not output if the tool number of a tool not performing output is set to “0”.

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

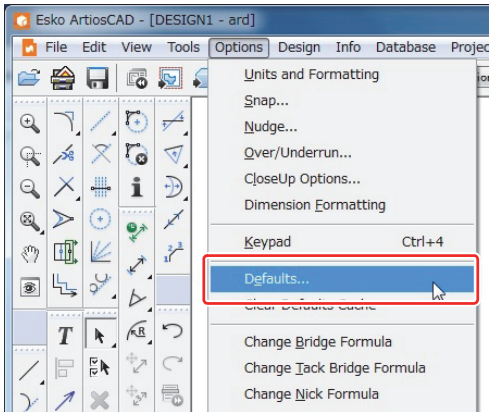
- The shared defaults are saved.



● Output type: CAM configuration

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

- The [Defaults] window opens.

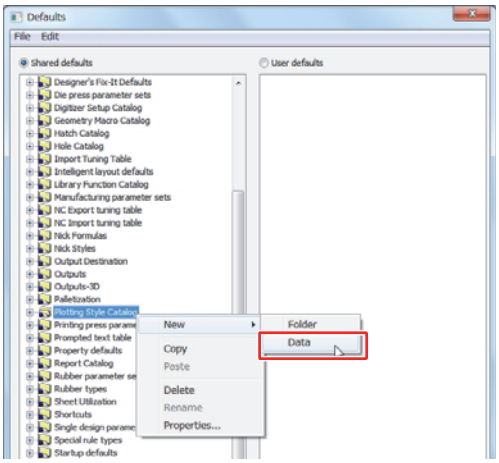


2 **Click the [+] symbol on the left side of the [Plotting Style Catalog] folder.**

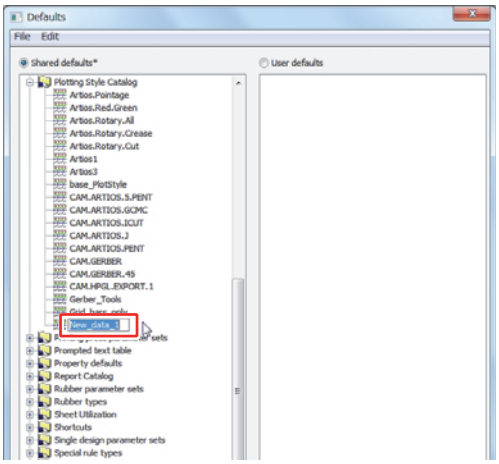
- The contents of the [Plotting Style Catalog] folder appear.
- If you do not want to create a new plotting style catalog, proceed to step 5.

3 **Right-click the [Plotting Style Catalog] folder, and then select [New] and [Data].**

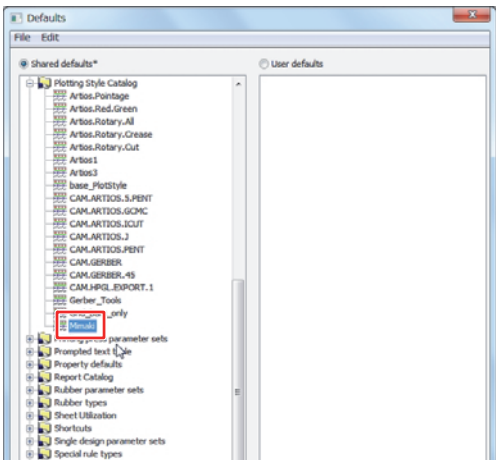
- A new plotting style catalog is created.



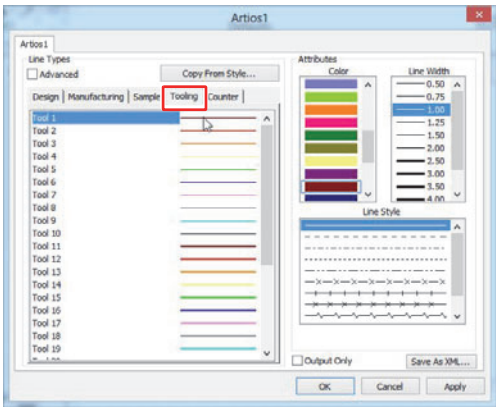
4 **Name the catalog.**



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

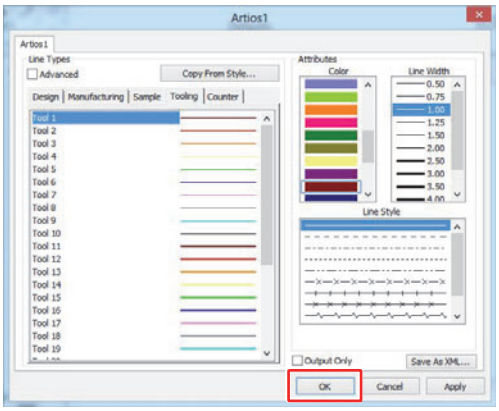


6 **Select the [Tooling] tab.**



7 **Set the "Color" for each tool and click OK.**

- Set a "Color" for each tool displayed under "Line Types"on the [Tooling] tab of the plotting style catalog. Procedures for selecting output tools vary depending on the driver used.
- For more detailed information regarding the line type settings, refer to P.2-16 "[Plotting Style Catalog] Window".



NOTE!

Output results differ depending on the output method.

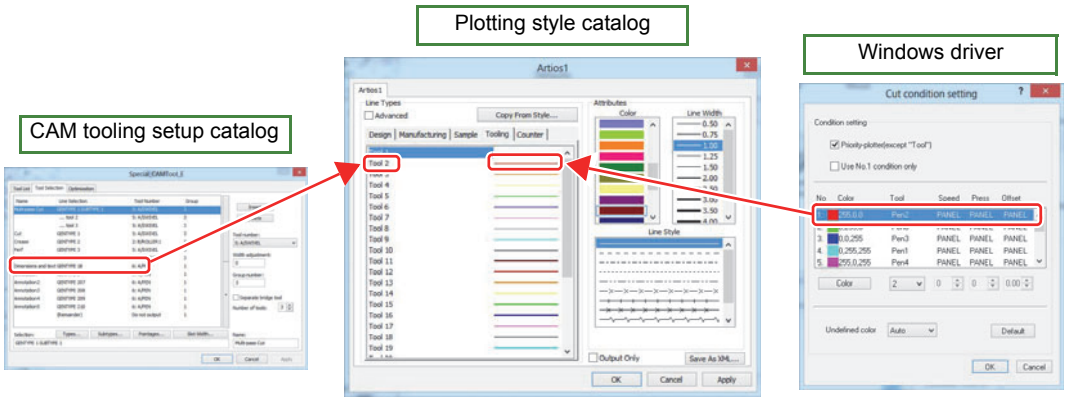
♦ **When using the Windows driver**
Output is performed according to the selected line style.

♦ **When using the CAM driver**
You can select the line style but output is performed by using all straight lines.

Configure the tool settings beforehand.

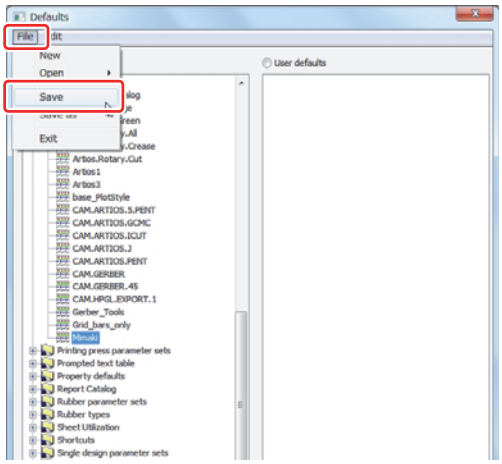
Configure the tool settings beforehand by using the [CAM Tooling Setup Catalog].
The settings of the tool number selected in the [Tooling] tab of the plotting style catalog depend on the settings specified for the [CAM Tooling Setup Catalog].

♦ **When using the Windows driver**
Tool selection for the “Color” set in the [Tooling] tab of the plotting style catalog is performed by using the cutting driver.



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

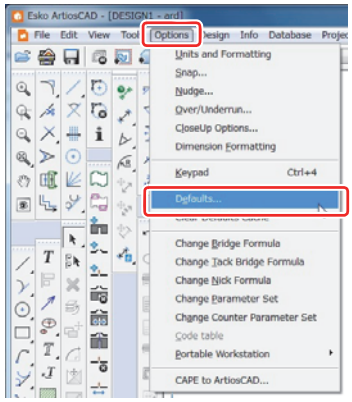
- The shared defaults are saved.



● Output type: Sample configuration

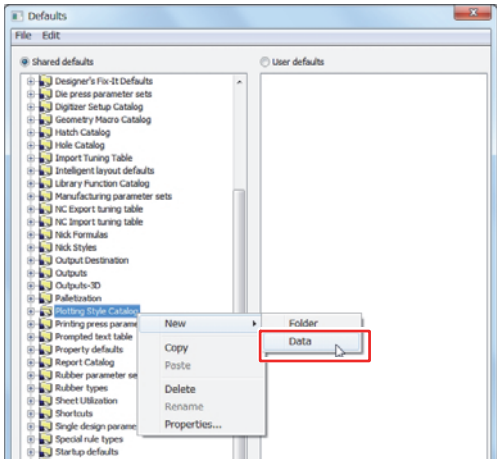
1 Select [Defaults...] in the [Options] menu.

- The [Defaults] window opens.



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

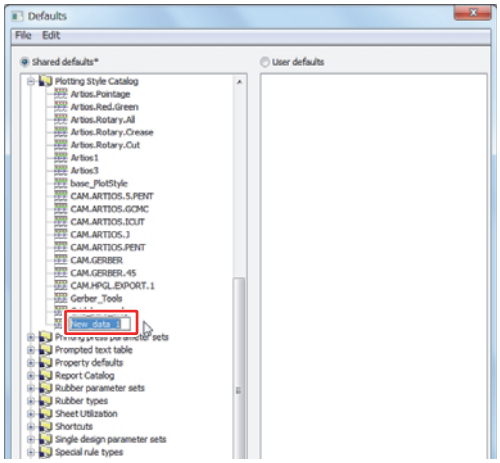
- The contents of the [Plotting Style Catalog] folder appear.
- If you do not want to create a new plotting style catalog, proceed to step 5.



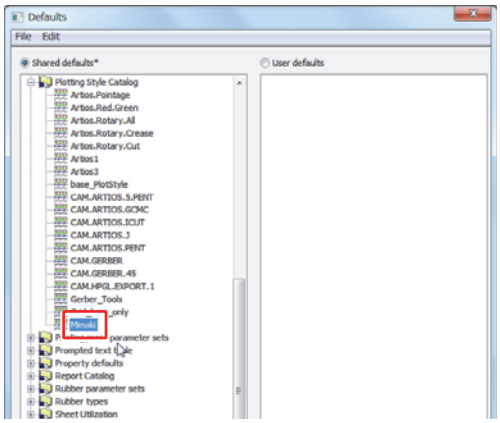
3 Right-click the [Plotting Style Catalog] folder, and then select [New] and [Data].

- A new plotting style catalog is created.

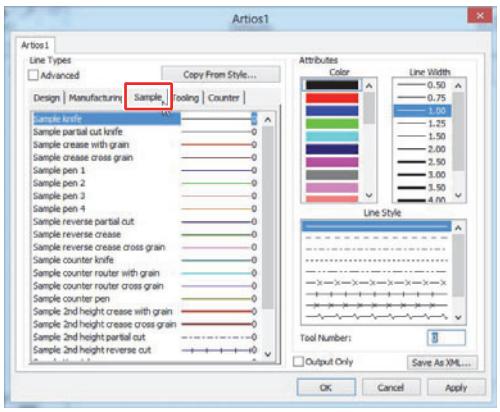
4 Name the catalog.



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

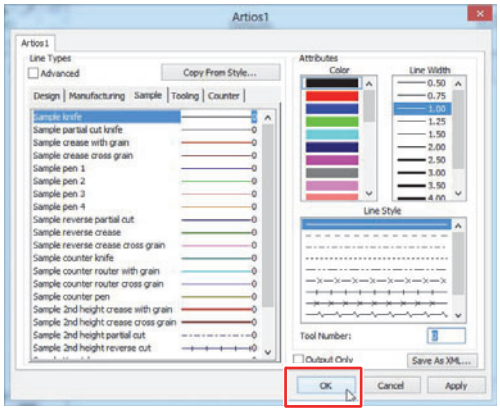


6 Select the [Sample] tab.



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

- For more detailed information regarding the line type settings, refer to P.2-16 “[Plotting Style Catalog] Window”.
- OK Clicking Cancel instead of [OK] cancels the settings you have just specified.



NOTE!

Output results differ depending on the output method.

♦ **When using the Windows driver**
Output is performed according to the selected line style.

♦ **When using the CAM driver**
You can select the line style but output is performed by using all straight lines.

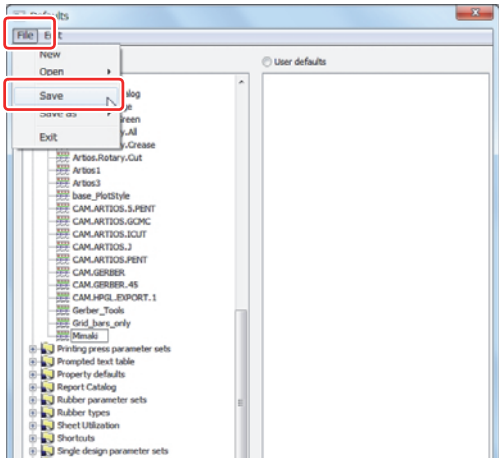
When there are line types that are not output

♦ **When using the Windows driver**
You can set data not to be output by dividing the data into layers and switching between the display and hide layers settings.
For details, refer to P.1-32 “Layer Operation”.

♦ **When using the CAM driver**
The specified line type is not output if the tool number of a tool not performing output is set to “0”.

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

- The shared defaults are saved.



Output type: Selecting Plot

To output using Artios CAD DS, 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".

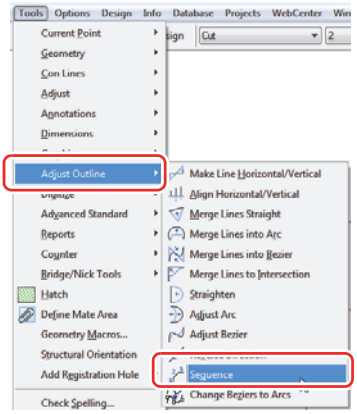
- ♦ Setting the cut direction and sequence in "Sequence". (The procedure is described below. Follow the steps below to set them.)
- ♦ Set the plot style catalog referring P2-18.

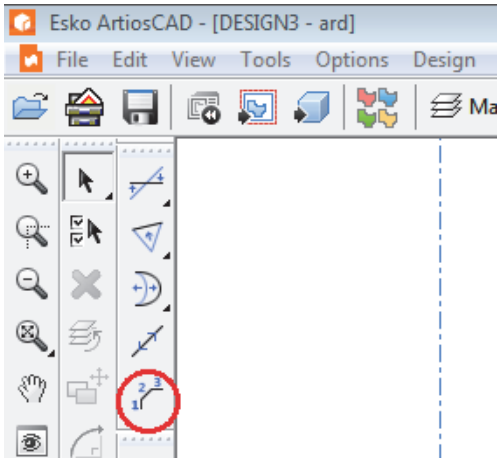
1st. Set the cut direction and sequence in "Sequence".

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

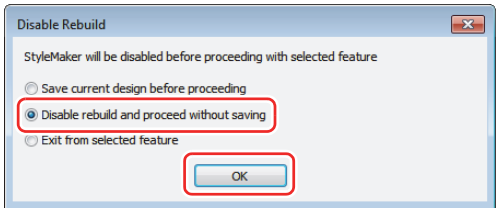
1 **Click [Sequence] icon.**

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

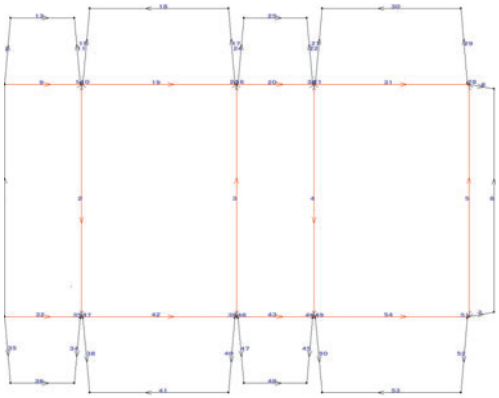




2 **If [Disable Rebuild] dialog is displayed, select [Disable rebuild and proceed without saving] and click OK.**

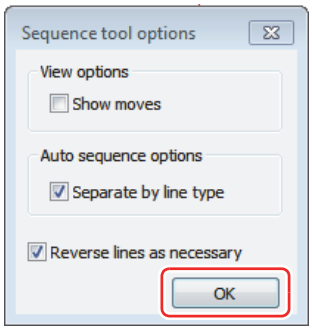


- Cut order and cut direction are displayed.



3 Set the sequence.

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

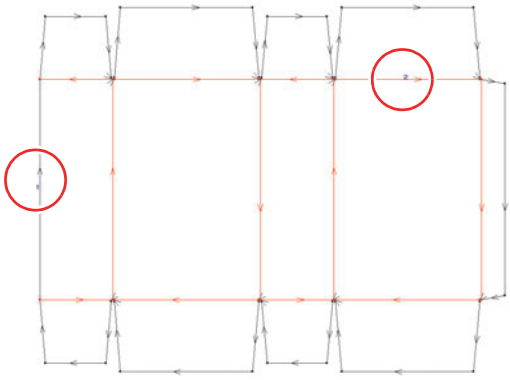


- When check [Auto sequence options] - [Separate by line type], each line type and Pointage are separated as a group, and you will be able to set the sequence on a group basis.
- When check [Reverse lines as necessary], the cut direction is reversed as needed, and provides the best sequence.

(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.

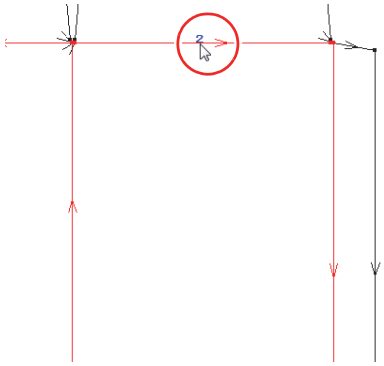
● Changing the cut sequence

(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 tipe.

● 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.2-17)

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 and the plot style catalog before selecting "CAM" as the output type.

♦ Refer to P2-7 for CAM Tooling Setup Catalog, and P2-20 for the plot style catalog.

1st. Setting the CAM Tooling Setup Catalog. (→P.2-7)

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.2-24 “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 Artios CAD DS are replaced to the sample type line (You need to create the sample line before the output (→P.2-46), 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.

Line type on the design data	Sample line type to create
Cut	Sample knife
Crease	Sample crease (along the 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.2-46 “Configuring the Sample Line Type” for setting the sample line type.

2nd. Setting tools and line colors for each sample line type (→P.2-22)

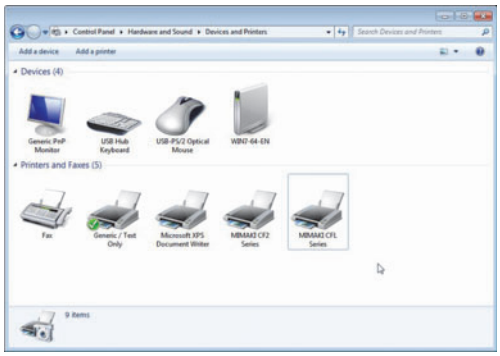
Selecting the Driver Type

You can select either the “Windows driver” or “CAM driver” for performing output with the ArtiosCAD DS.

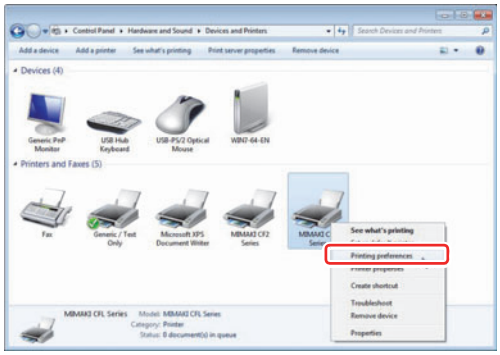
Characteristics of the Windows driver	You can set the color for each line type and cutting conditions for each color. You can output in the line style set in the plotting style catalog.
Characteristics of the CAM driver	You can set the cutting conditions for each tool used. The cutting accuracy is superior to that of the Windows driver. Stroke output of text is not possible.

Setting the cutting conditions by using the Windows driver

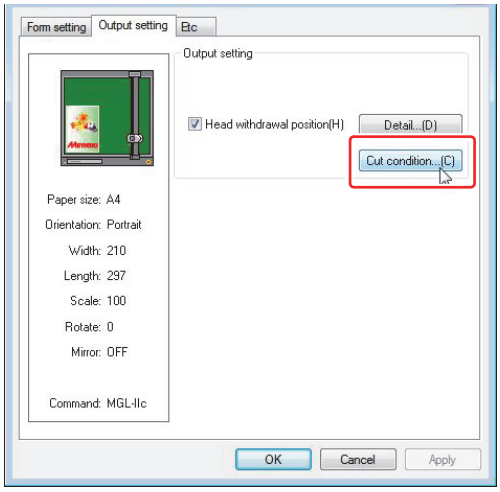
1 **Open [Devices and Printers] from the [Control Panel].**



2 **Select the driver whose settings you want to change, right-click on it, and select [Print Settings].**



3 **Click on [Cutting Condition Settings] on the [Output Settings] tab.**



4 Set the tool and output conditions for each color.

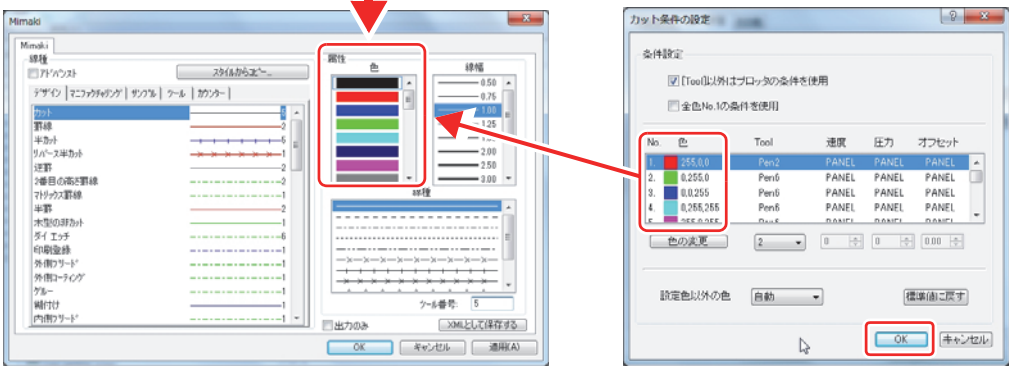
- You can set the output conditions for the colors set for each line type by using the [Plotting Style Catalog] of ArtiosCAD DS.
- For a detailed explanation of settings, refer to the instruction manual of the cutting drivers.

If setting the cutting conditions for each color, set items such as the tool (pen no.) for each color that are set by using the plotting style catalog of the [Cutting Condition Settings] of the Windows driver.

List of Colors Selectable by Using a Plotting Style Catalog

	Color	R	G	B			Color	R	G	B			Color	R	G	B	
1		0	0	0		10		255	127	127	○	19		127	0	127	○
2		255	0	0		11		127	0	255	○	20		127	0	0	○
3		0	0	255		12		127	127	255	○	21		0	0	127	○
4		0	255	0		13		127	255	0	○	22		0	127	127	○
5		0	255	255		14		255	127	0	○	23		0	127	255	○
6		0	0	127	○	15		255	0	127	○	24		0	255	127	○
7		255	0	255		16		0	127	0	○	25		127	255	127	○
8		127	127	127	○	17		127	127	0	○	26		127	255	255	○
9		255	127	255	○	18		255	255	127	○						

- Colors indicated by a " ○ " are not available with the Windows driver. Click the [Change Color] button and input the RGB values shown in the table to register the color.



5 Configure the settings for each color and click OK.

Setting the cutting conditions by using the CAM driver

If performing output by using the CAM driver, it is necessary to set the cutting conditions for each tool.
P.2-11For setting the cutting conditions, refer to "NC Output Tuning Table".

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 Windows drivers	Windows driver installation	Refer to "Connection Guide" provided separately
When using the CAM drivers	Adding a printer (Generic/Text Only) to your PC	
	Configuring the NC output tuning table	P.2-11
When setting the output type to "CAM"	Configuring the CAM tooling setup catalog	P.2-7
Configure regardless of the driver or output type.	Configuring the plotting style catalog	P.2-14

Output Configuration

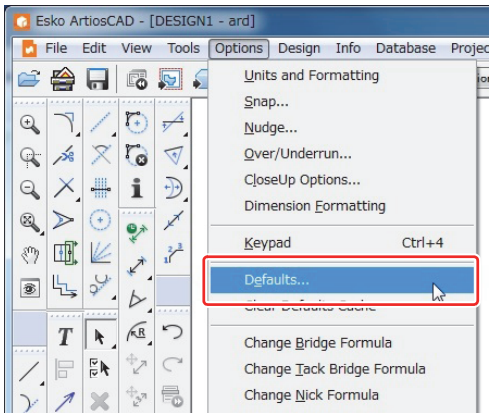
Follow the instructions below to open the output file, and configure the settings in the [Output Settings] window.

NOTE!

- 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.

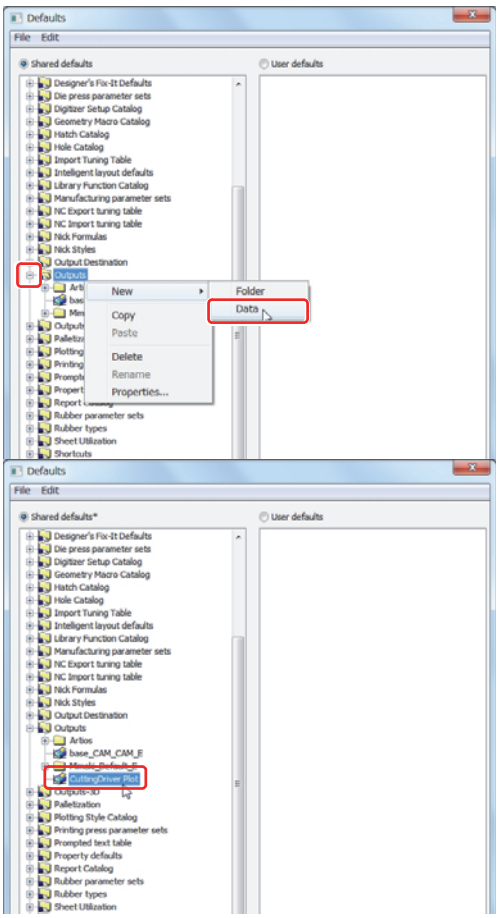


2 Click the [+] symbol on the left side of the [Outputs] folder.

- The contents of the [Outputs] folder are displayed.
- If you do not wish to create a new output file, proceed to step 5.

3 Right-click the [Outputs] folder, and then select [New] and [Data].

- A new output file is created.



4 Name the output file.

- Use half-width alphanumeric characters for the name.

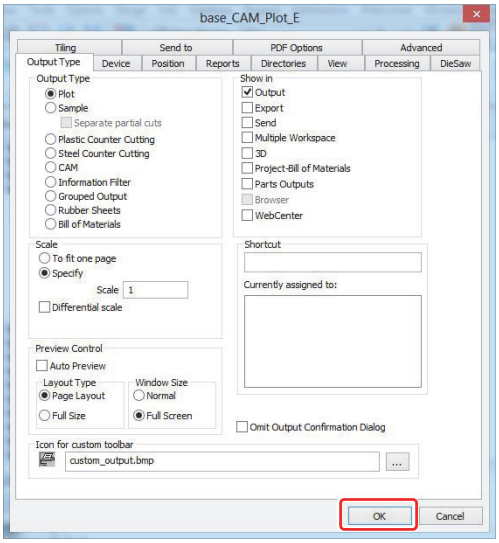
5 Double-click the output file you wish to edit.

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

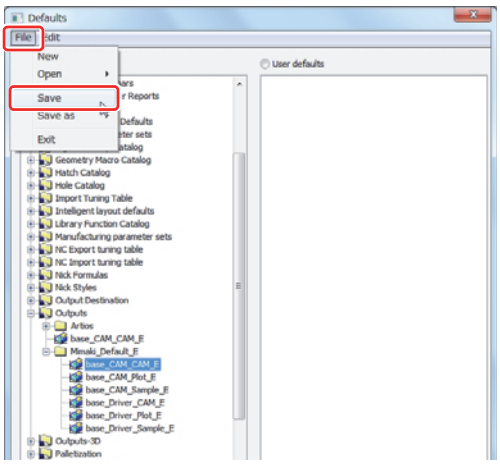
6 Configure the output settings.

- 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.2-31.

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

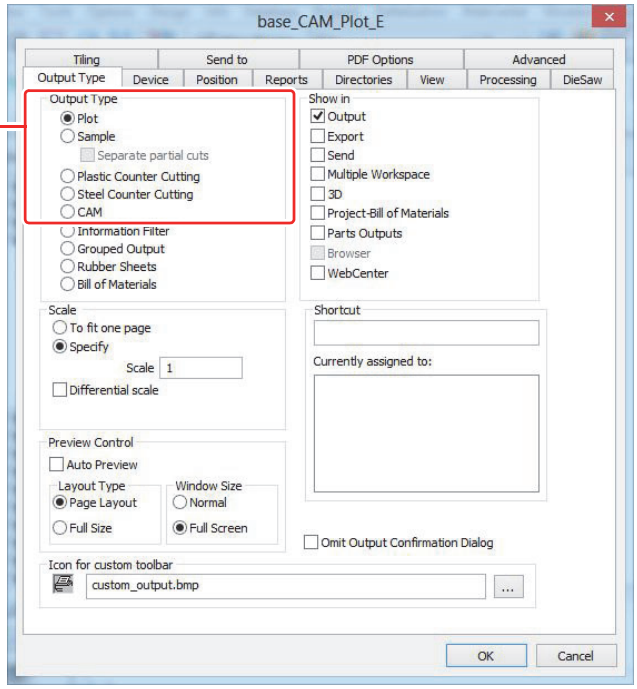


8 Select [Save] in the [File] menu, and save the shared defaults.



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

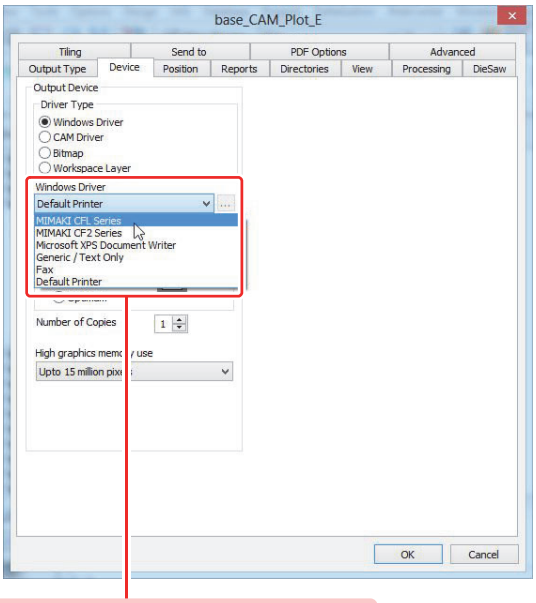
Select the radio button in front of the output type you wish to use.



● Configure the settings in the [Device] tab.

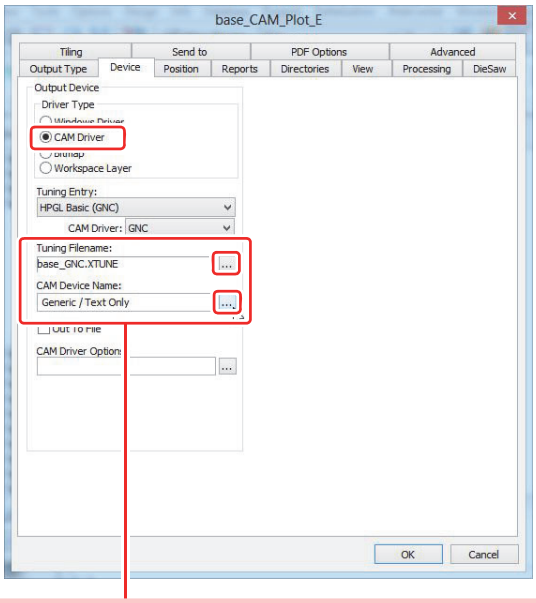
The setting parameters in the [Device] tab depend on the output device type you select at the beginning.

When selecting the Windows driver



Select the printer you wish to use.
Click [▼] to select a printer.

When selecting the CAM driver



Select the tuning table and the CAM device (printer) you wish to use. Click [...] to select a device.

- Tuning table : Select the NC output tuning table you configured in the section on P.2-11.
- CAM device : Select "Generic/Text Only"

NOTE!

♦ If you wish to output all the tools with the output conditions of the plotter, select "base_GNC."

● Configure the settings in the [Position] tab.

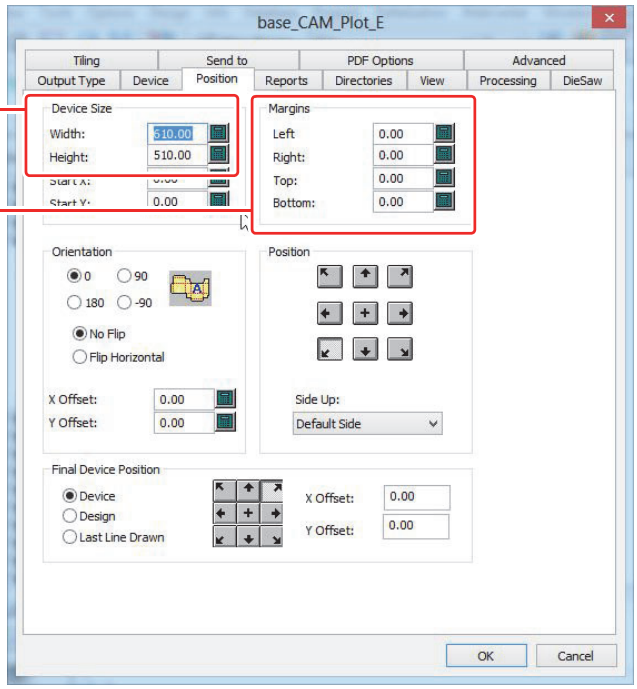
Enter the cutting area size for the plotter you are using. (If you are using the Windows driver, the paper size configured in the driver is entered automatically.)

By setting the values in these fields, you can define the margins for the image you have designed when you output it.

NOTE!

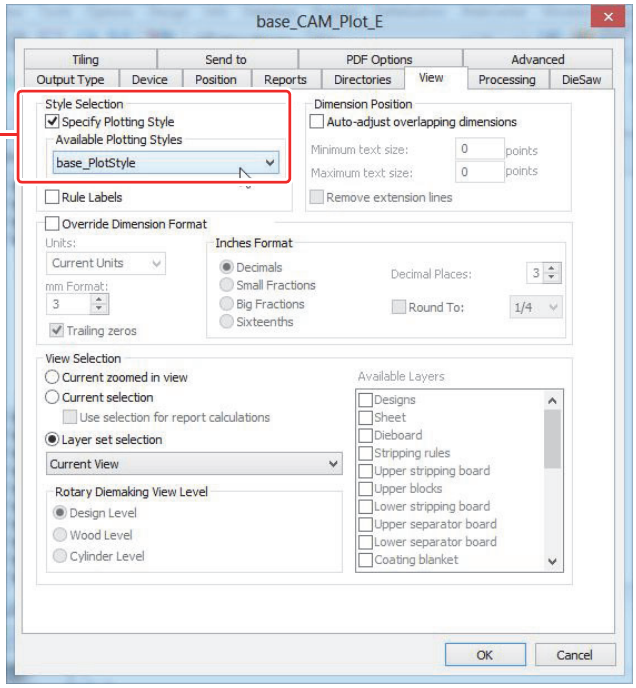
♦ If the size of an image you have designed and its margins exceed the cutting area size, the output results may not meet your expectations.

♦ When you are using the Windows driver, a 0.5-millimeter margin is created automatically.



● Configure the settings in the [View] tab.

1. Check "Specify Plotting Style."
2. Click "Available Plotting Styles" and select the plotting style catalog you configured in the section on P.2-14.

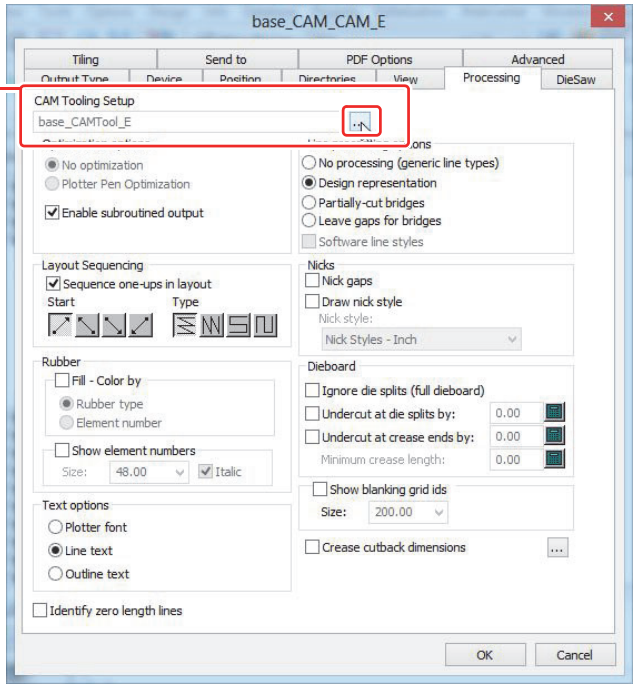


♦With the CAM driver output and the CAM output type, you do not need to configure the plotting style catalog.

● Configure the settings in the [Processing] tab.

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

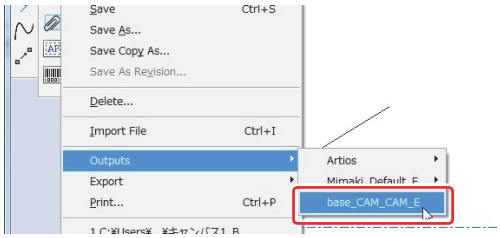
Select the CAM tooling setup catalog you configured in the section on P.2-7.
Click [...] to select a catalog.



NOTE!	♦ Make sure you have finished configuring the output settings first.

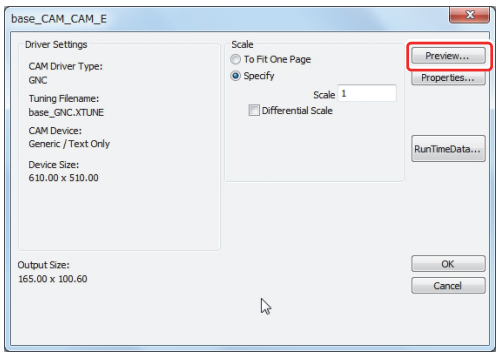
1 Go to [Outputs] in the [File] menu to select an output setting.

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

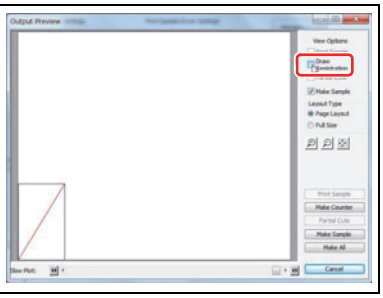


2 Click Preview .

- Click Preview to open the "Output Preview" window.
- In the output preview window, check the line color, line type (line shape), cutting sequence and cutting direction. When using the Windows driver for the output, be sure to check the output style as well.



NOTE!	♦ 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.

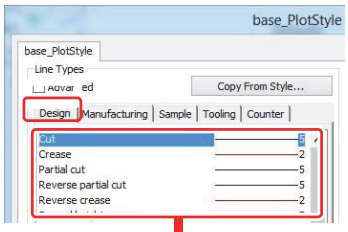
How to check the output preview

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

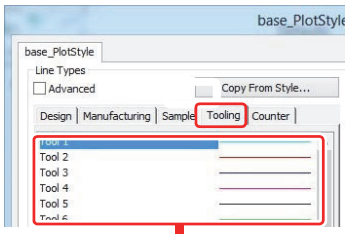
The tabs for checking the line settings in the plotting style catalog differ according to the configured output type.

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.

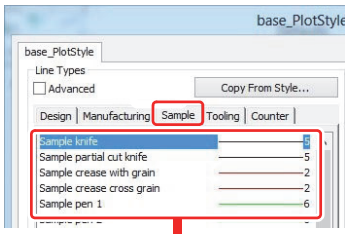
Output type: Plot



Output type: CAM



Output type: Sample



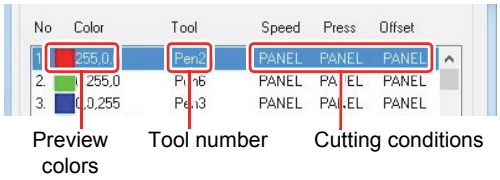
Line type (left side) and line color/shape (right side)

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

> **NOTE!** ♦ 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.2-29)

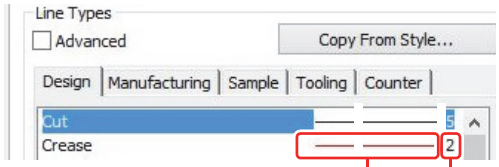
♦ **Checking the output conditions in the preview window**

When using the Windows

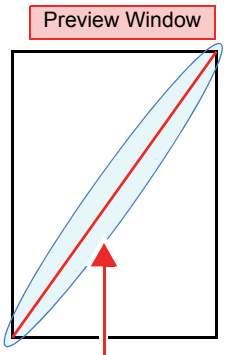


You can check the conditions by opening "Cutting Condition Settings" as described in step 3 on P.2-27"Setting the cutting conditions by using the Windows driver."

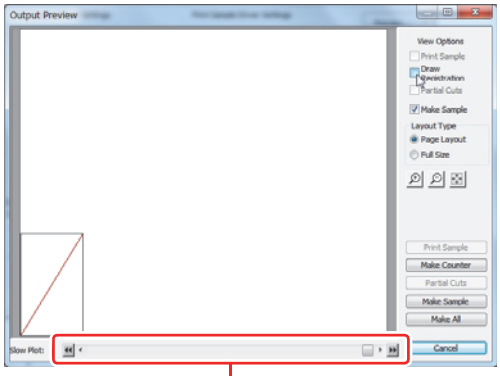
When using the CAM drivers



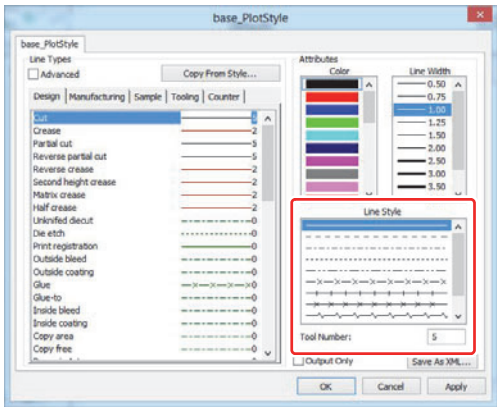
You can check the conditions in the plotting style catalog (→ P.2-14).



♦ **Checking the cutting sequence and cutting direction**
Use the scroll bar at the bottom of the output preview window to check the settings.



♦ **Checking the output style (only for the Windows driver output)**
With the Windows driver output, the line type (shape) configured in the plotting style catalog is output. Make sure that the shape shown in the preview matches the one you have chosen.

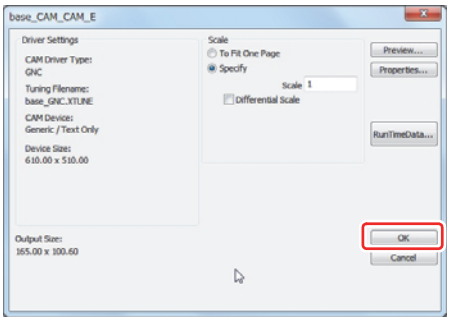


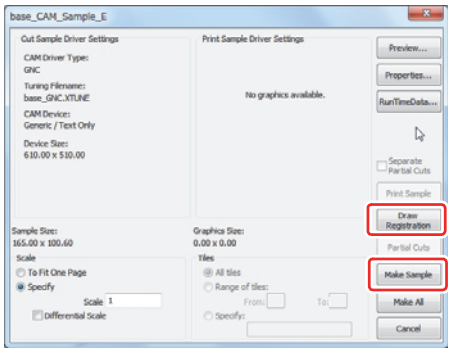
4 After checking the preview, click [Cancel] or [X] to close the preview window.

NOTE!	♦ 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 **Make Counter** 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.2-53.)





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 4 patterns as examples illustrating how to switch between the settings.

(1) Changing the output destination when using the Windows driver
(2) Changing the cutting conditions for the CAM driver output with the NC tuning table
(3) Configuring the settings in the output process with the plotting style catalog
Windows driver: Changing the color for the line type
CAM driver: Changing the tools for the line type
(4) 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

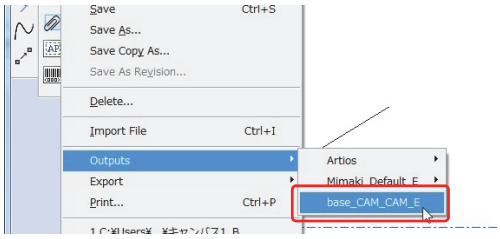
1 Make sure you have configured the output settings.

- P.2-29Refer 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 Windows driver
(2) Changing settings with the NC tuning table
(3) Changing settings with the plotting style catalog
(4) Changing settings with the CAM tooling setup catalog

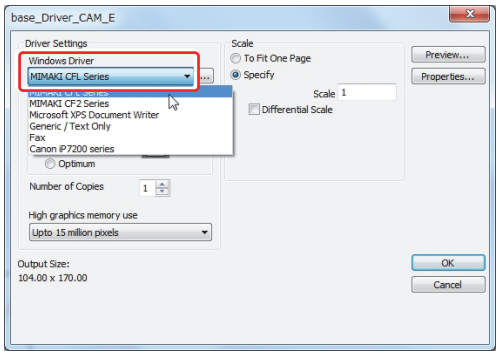


● (1) Changing settings with the Windows driver

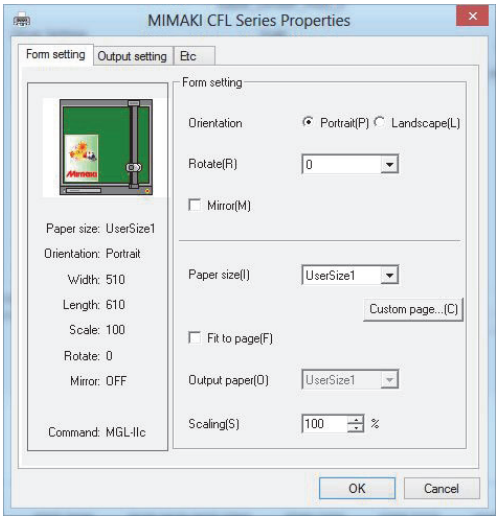
1 Refer to the Windows driver manual to make sure that the settings have been configured.

2 Click [▼] of [Driver Settings] - [Windows Driver] to select the driver used.

- Click [...] to access the properties of the driver you have selected.



3 Configure the necessary settings in the properties window.



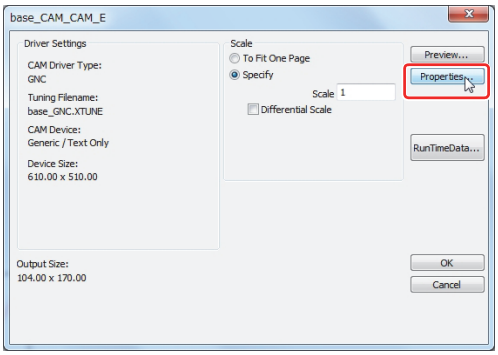
NOTE!	♦ The parameters you change here return to their original state when you close the [Outputs] window. We recommend referring to the Windows driver manual when changing the settings you use frequently.

● Changing settings as described in items (2) to (4)

1 Make sure you have configured the following settings.

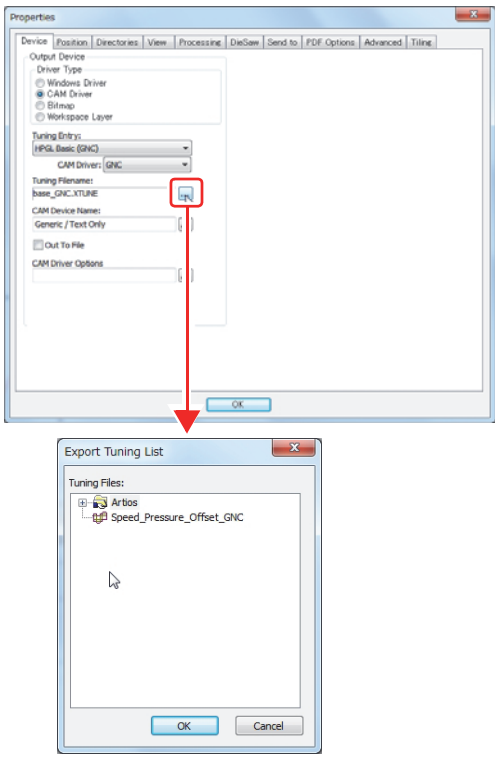
- NC tuning table settings (→ P.2-11)
- Plotting style catalog settings (→ P.2-17)
- CAM tooling setup catalog settings (→ P.2-7)

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

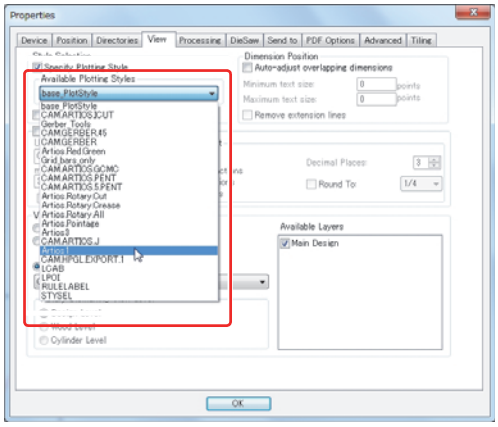


NOTE!	♦ The parameters you change here return to their original state when you close the [Outputs] window. We recommend changing the settings that you frequently use in [Options] - [Defaults]. ♦ If you wish to carry out the output process after changing the parameters that cannot be changed immediately 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.2-3 and creating several types of output settings.

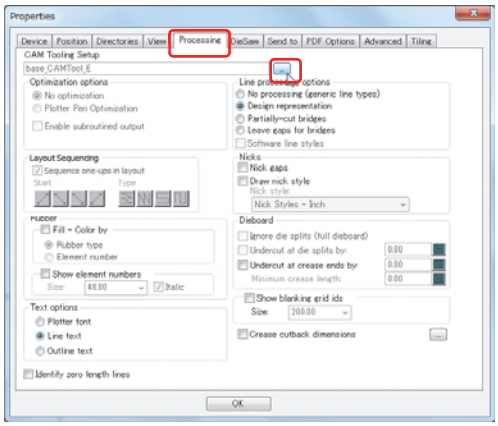
(1) Changing the settings with the NC tuning table
- Open the [Device] tab.
- Click [...] next to the tuning file name to change the tuning file.



(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."**

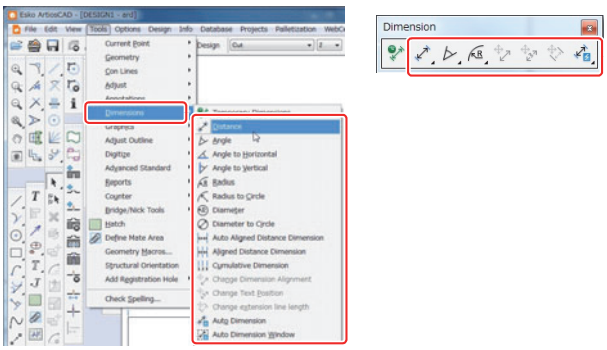
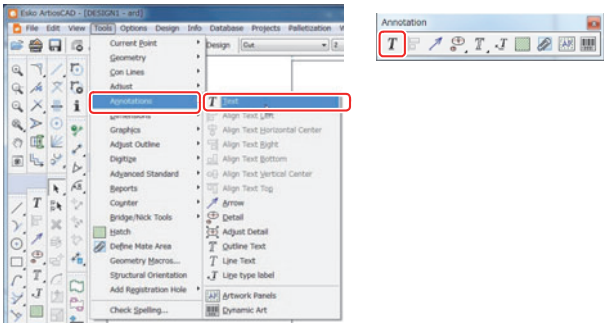
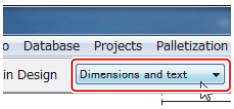
Configuring Special Output Methods

Text Output

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

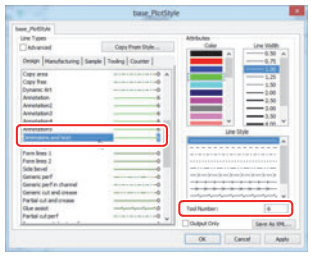
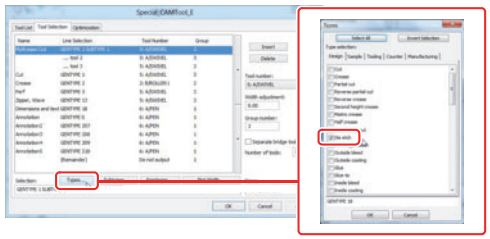
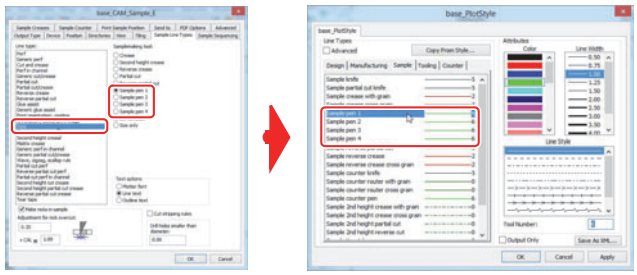
● Text types with different available output styles

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.	

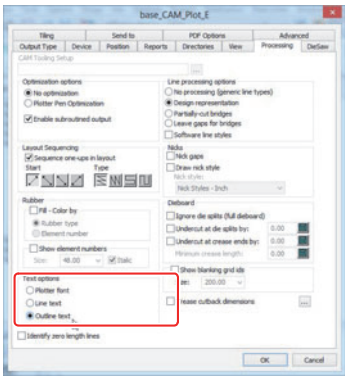
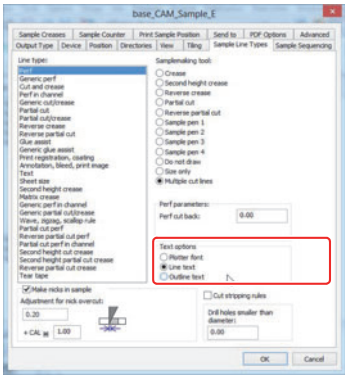
Setting up the tools for text output

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 (→ P.2-17)</td>
<td>  </td>
</tr>
<tr>
<td>♦ Output type: CAM
1. Click [Type] in the CAM tooling setup catalog ***No Trans***
2. Select "Die etch" and specify a tool (→ P.2-7).</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 (→ P.2-22).</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.

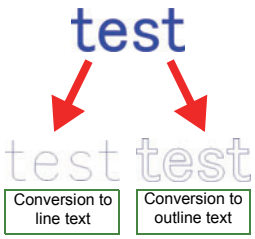
♦ **Output type: Plot or CAM** **1.** Open the [Processing] tab in the [Output Settings] window (→ P.2-29). **2.** Select an output style in the "Text options" section.	
♦ **Output type: Sample** **1.** Open the [Sample Line Types] tab in the [Outputs] menu. **2.** Select an output style in the "Text 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.

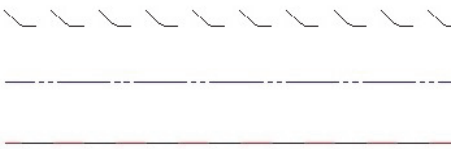
♦ **Outline text**
Select this option to output text in an outlined style. An outlined font will be used for the output.



NOTE!	
	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

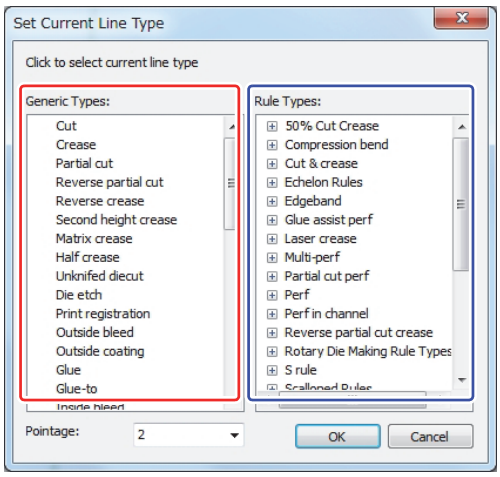
In ArtiosCAD DS, you can use the special cutlines like the ones shown to the right.
All special cutlines are normally converted to straight lines in the output process.
This section explains how to configure the settings for outputting frequently used line types.



In ArtiosCAD DS, 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 DS. 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, By running the special tool extension, you can also output the lines as they appear. (→ P.1-39 “Changing to a WYSIWYG Cutline”)



● Special Cutline Output Methods and Characteristics

There are 2 main output methods for the special cutlines: "Configuring the Line Processing Options" (P.2-44) and "Configuring the Sample Line Type" (P.2-46).
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.

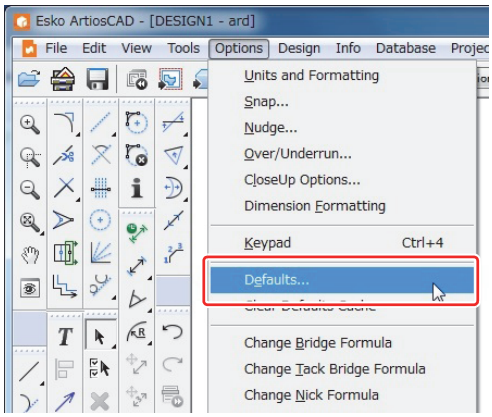
Configuring the Line Processing Options

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" (P.2-46).

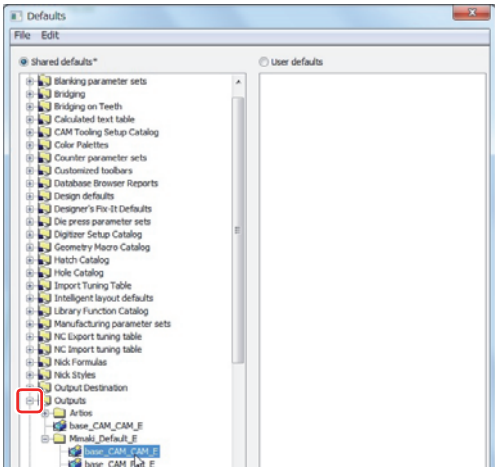
1 Select [Defaults...] in the [Options] menu.

- The [Defaults] window opens.



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

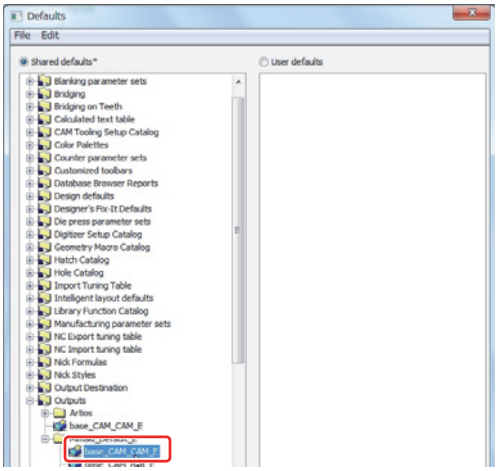
- The contents of the [Outputs] folder are displayed.



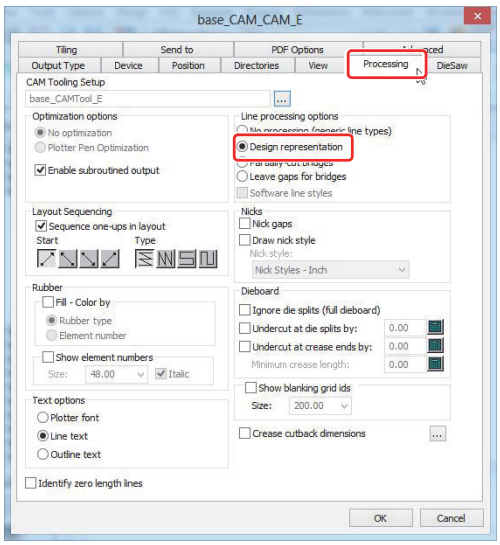
3 Double-click the output folder you wish to edit.

- 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" (P.2-46).



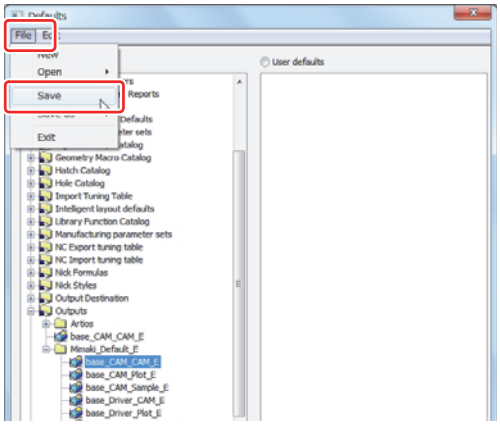
4 **Click the [Processing] tab and select "Design representation" under "Line processing options."**



5 **Click OK.**

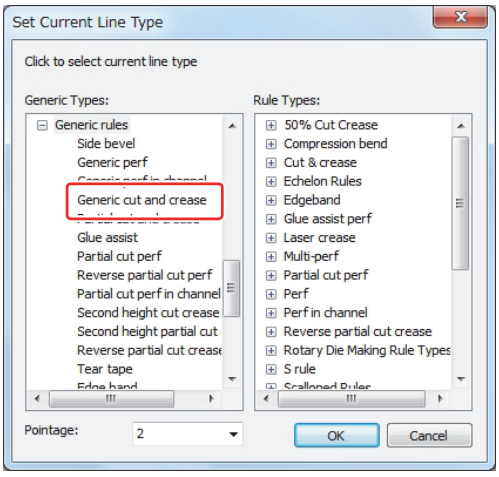
6 **Click [Save] in the [File] menu.**

- The shared defaults are saved.



Configuring the Sample Line Type

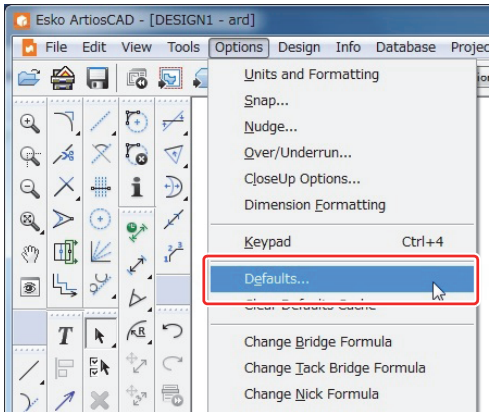
Output type: Configure the sample line type in order to output the special cutlines according to their shapes when the output type is set to "Sample."
If you configure the sample line type, you can control the output method for each line type in the output process.
This section uses the "Generic cut 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.
Follow steps 1 and 2 of the instructions in "Creating a Special Cutline" (P.1-36) to access the [Set Current Line Type] window.

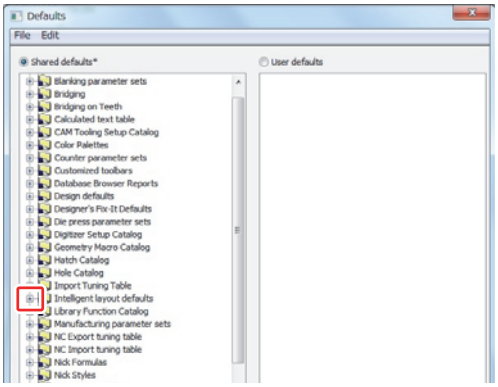
1 Select [Defaults...] in the [Options] menu.

- The [Defaults] window opens.



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

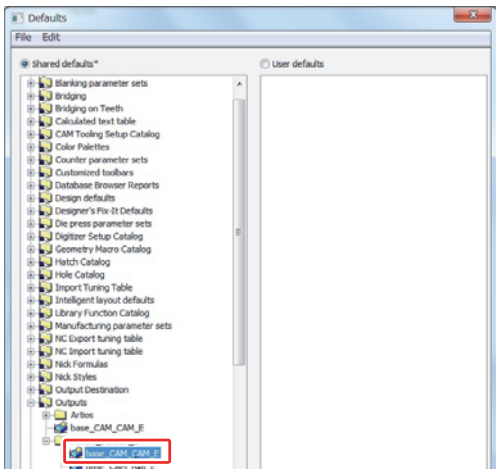
- The contents of the [Outputs] folder are displayed.



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

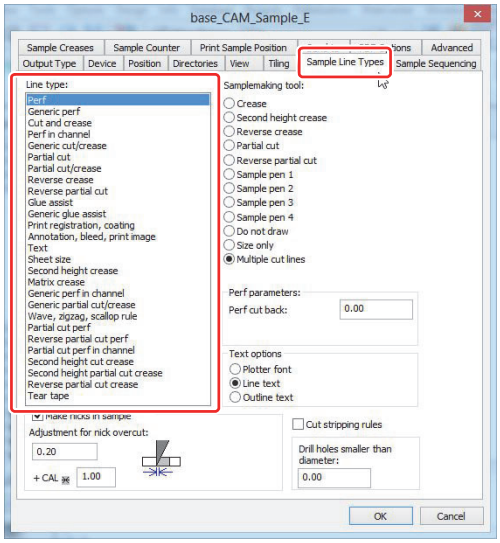
- A window opens.
- Make sure the output type in the "Output Type" tab is set to "Sample."

♦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" (P.2-44).



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

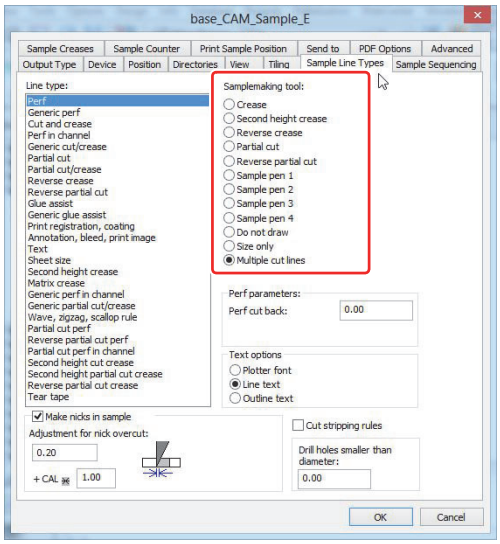
- Select the line types where you wish to change the settings from the list on the left side of the window.
- The names listed on the left side of the window may differ from the names of the line types that you configured when creating the design. Refer to the line type list (P. 2 - 62).
- Line type: 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.

NOTE!	♦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 P.2-22.



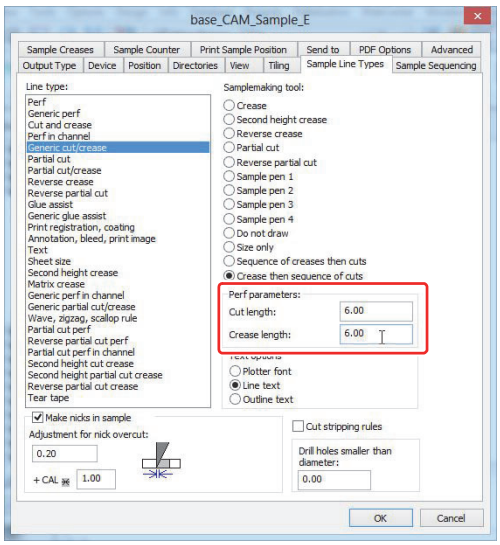
Sample Making Tool List

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

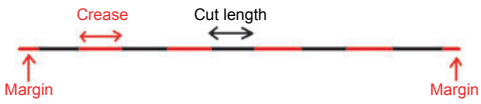
6 Configure "Perf parameters."

- 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 P.2-66"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.



1. Generic



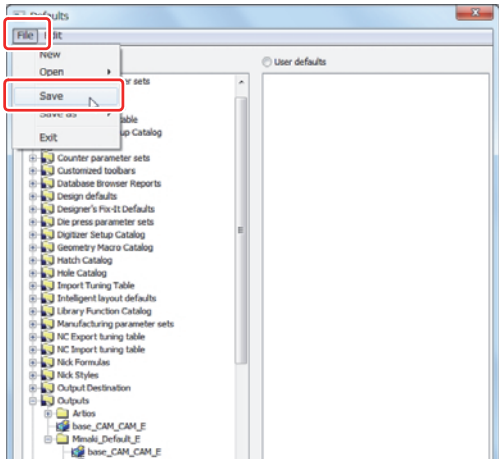
2. Perforations

NOTE!	♦ 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 (P.2-62).

7 Click OK.

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

- The shared defaults are saved.



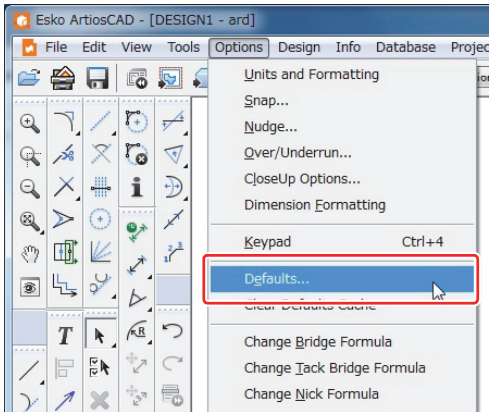
Using Double Pass Creases

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

NOTE!	♦ 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.

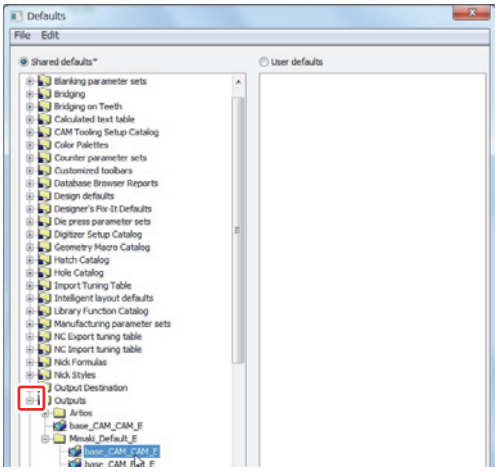
1 **Select [Defaults...] in the [Options] menu.**

- The [Defaults] window opens.



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

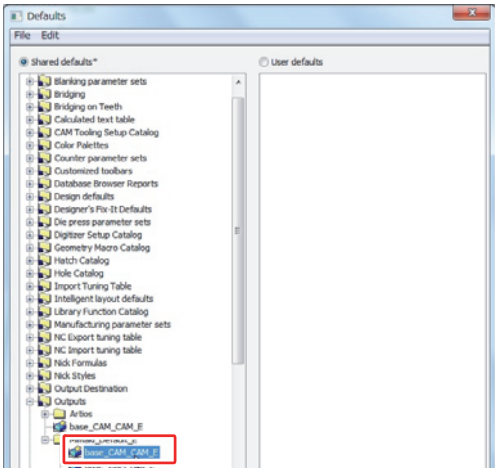
- The contents of the [Outputs] folder are displayed.



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

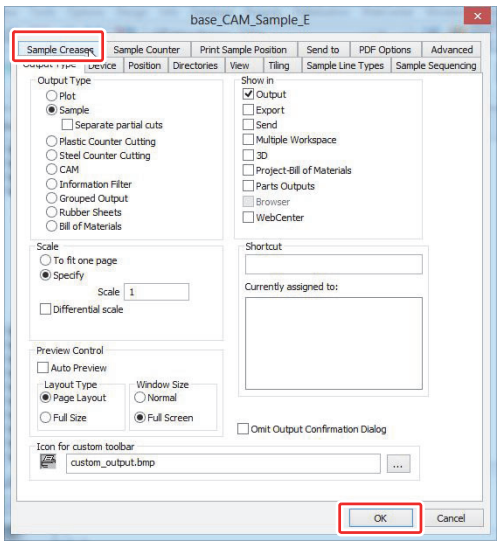
- A window opens.
- Make sure the output type in the "Output Type" tab is set to "Sample."

♦ If the output type is set to "CAM" or "Plot," the sample crease cannot be configured.

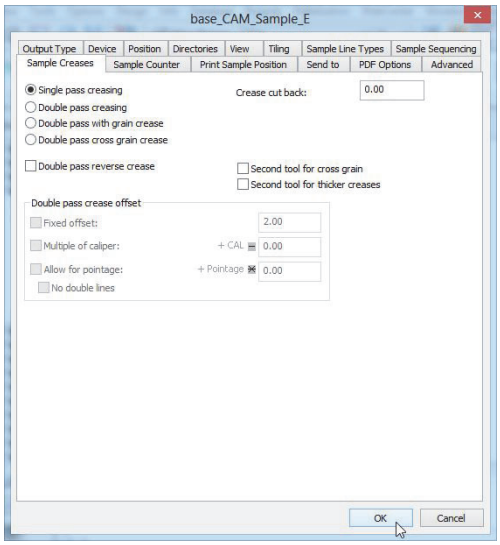


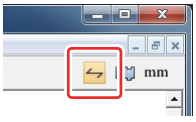
4 Click the [Sample Creases] tab, and configure the settings.

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



5 When you finish configuring the settings, click OK.

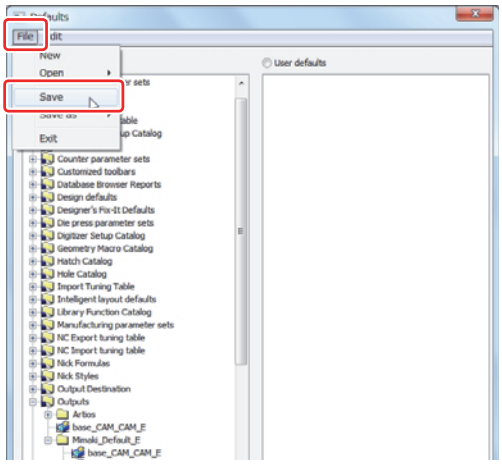


Single pass creasing	This option applies a single crease.
Double pass creasing	This option applies a crease twice.
Double pass with grain crease	Only the creases that run in the grain direction are applied twice, whereas all other creases are applied only once. You can check the (paper) grain direction 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. NOTE! ♦ This function does not allow you to output the creases in order of the smallest pointage value to the largest pointage value.

<table>
<tr><td colspan="2">Double pass crease offset</td><td>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] + The value obtained when [Pointage] is deducted from the crease pointage = Offset</td></tr>
<tr><td rowspan="3"></td><td>Fixed offset</td><td>The offset value is determined by the specified (fixed) value.</td></tr>
<tr><td>Multiple of caliper</td><td>The offset value is determined by the value obtained if the currently set board thickness is multiplied by [Multiple of caliper].</td></tr>
<tr><td>Allow for pointage</td><td>The offset value is determined by the value obtained if [Pointage] is deducted from the crease pointage.</td></tr>
<tr><td colspan="2">No double lines</td><td>If the offset value is set to "0" or less, the creases are not applied twice.</td></tr>
</table>

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

- The shared defaults are saved.



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

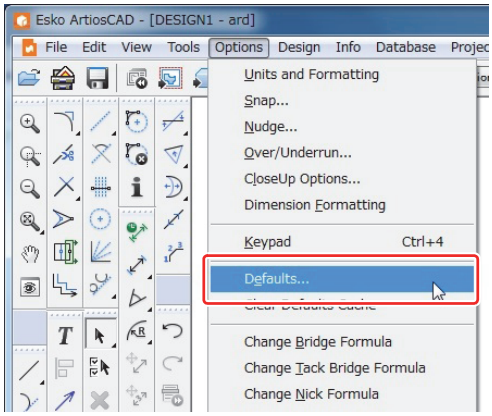
- For instructions regarding the output method, refer to "Output in ArtiosCAD DS" on P.2-34.

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 DS allows you to automatically create simple counter plates starting from their design.

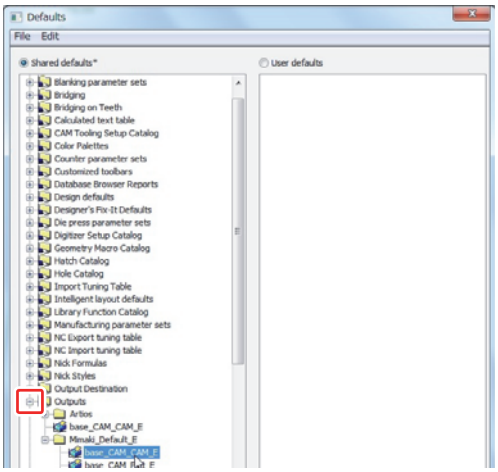
1 **Select [Defaults...] in the [Options] menu.**

- The [Defaults] window opens.



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

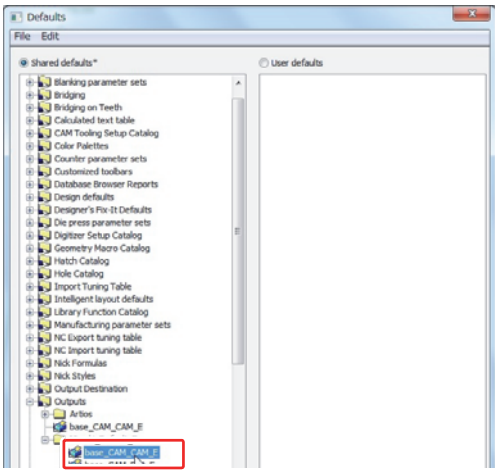
- The contents of the [Outputs] folder are displayed.



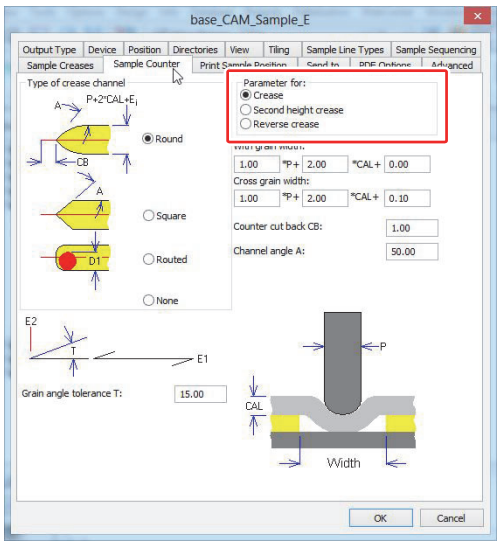
3 **Double-click the output folder you wish to edit.**

- A window opens.
- Make sure the output type in the "Output Type" tab is set to "Sample."

NOTE!	♦ 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."

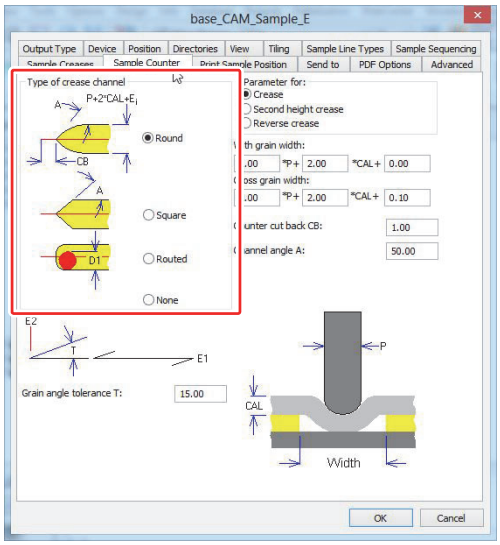


- **If you switch on the [Crease] radio button**
  This option enables the mode for configuring the shape of the crease channel for the line types where the sample line type is "Sample crease with grain."
- **If you switch on the [Second height crease] radio button**
  This option enables the mode for 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.

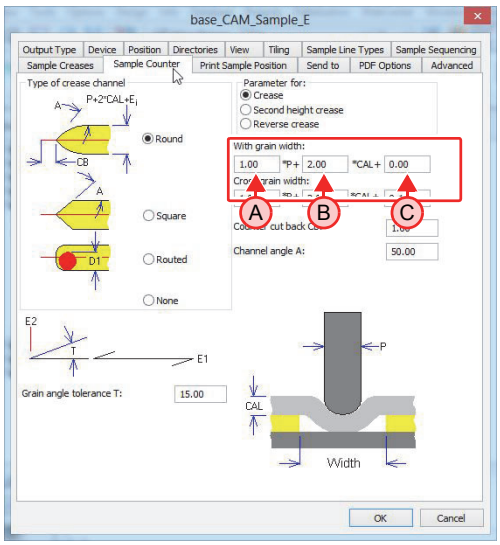
NOTE!	♦ If you do not wish to create a simple counter plate, select an option under "Parameter for" for the corresponding sample line type, and select [None] under "Type of crease channel" to the left.

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

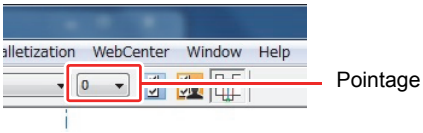
- **Round** : This option makes both ends of the simple counter plate rounded according to the channel angle A.
- **Square** : This option makes both ends of the simple counter plate straight according to the channel angle A.
- **Routed** : Select this option if you wish to create a simple counter plate 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."

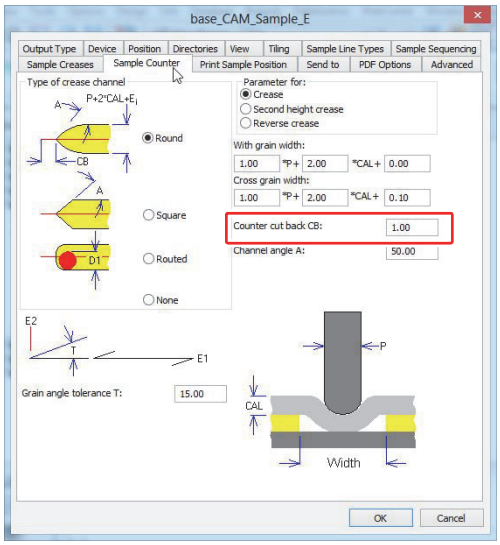


- Enter the values for calculating the crease channel width into the formula under "With grain width."
- The channel crease width (Width) is calculated with the following formula.
  Width = A x P + B x CAL + C
  P: The base crease pointage (units: pt)
  CAL: The currently configured board thickness
- 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].)
- Right-click the design to access the stencil paper information, and go to Datacenter Admin to change the stencil paper settings.
  (→ P.1-5 “Adding / Editing Board Information”)



NOTE!	♦ Convert the units used for "P," the base crease pointage, to "in" or "mm," and calculate the value.

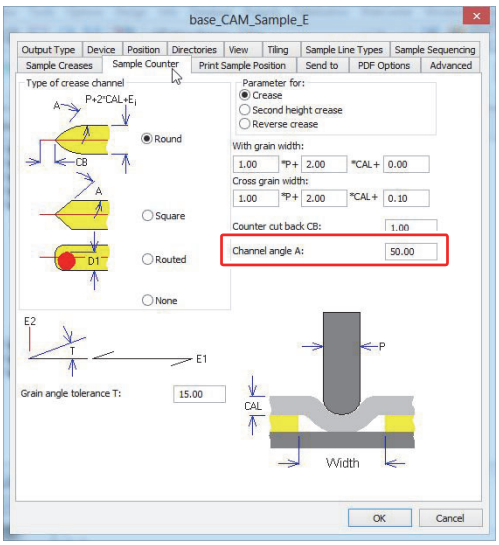
7 Set the counter cut back value.



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

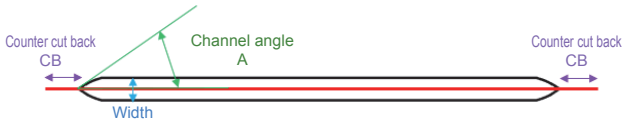
8 Configure other settings.

- 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.)

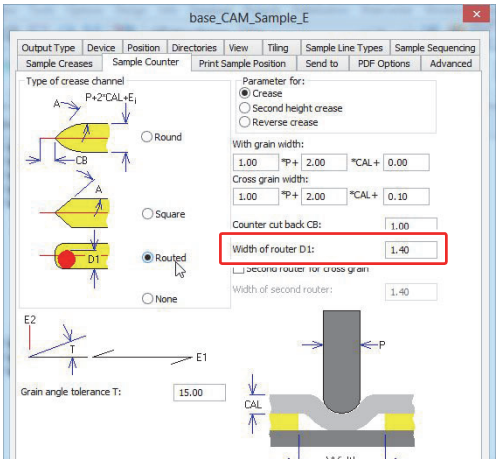


Design crease

The simple counter plate to be cre-



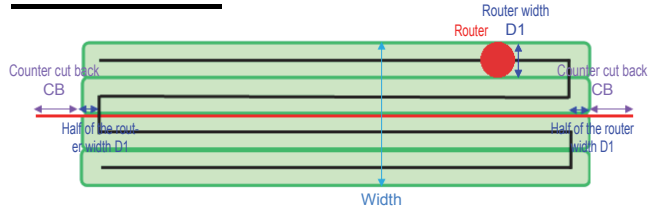
- If you select "Routed" as the simple counter plate type, enter the width of the router you are using in the "Width of router D1" field. The central trajectory of the router is calculated with this value and the simple counter plate width (Width).



Design crease

The actual parts to be removed

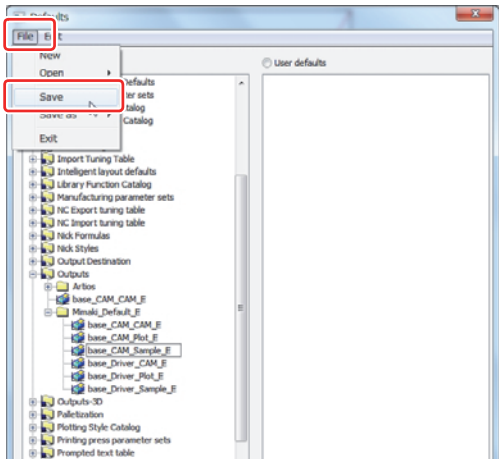
The line to be created



9 When you finish configuring the settings, click OK.

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

- The shared defaults are saved.

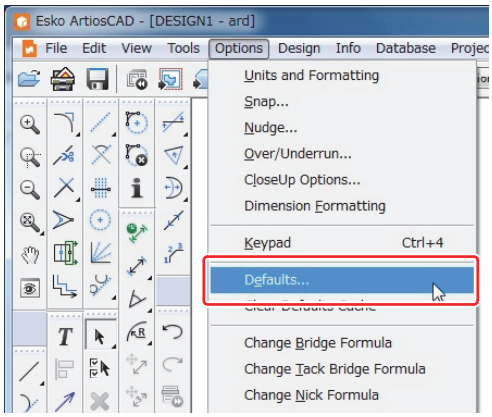


Output Adjustment in the [Sample Sequencing] Tab

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.

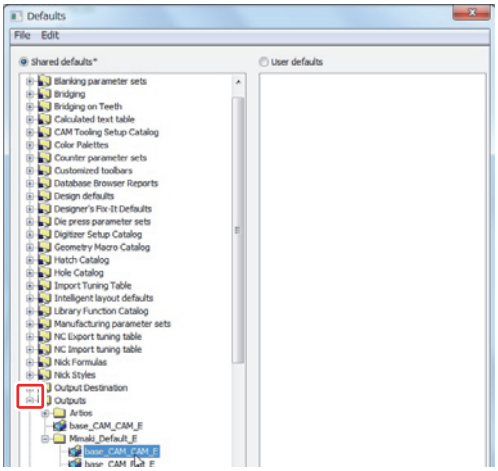
1 **Select [Defaults...] in the [Options] menu.**

- The [Defaults] window opens.



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

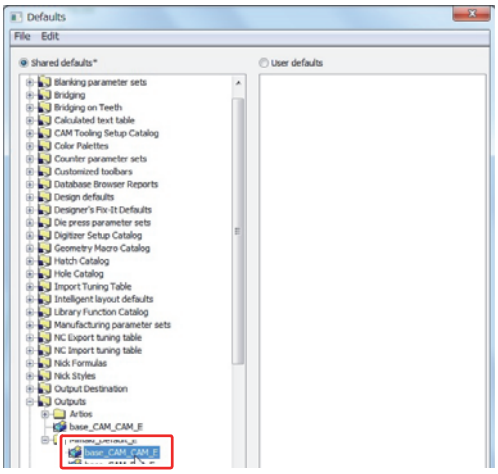
- The contents of the [Outputs] folder are displayed.



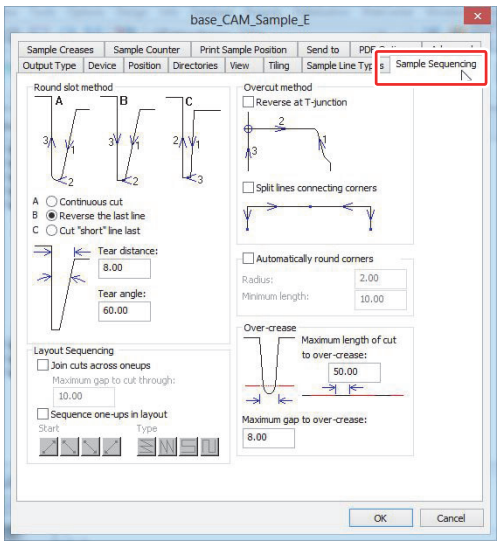
3 **Double-click the output folder you wish to edit.**

- A window opens.
- Make sure the output type in the "Output Type" tab is set to "Sample."

NOTE!	♦ If the output type is set to "CAM" or "Plot," a simple counter plate cannot be created.

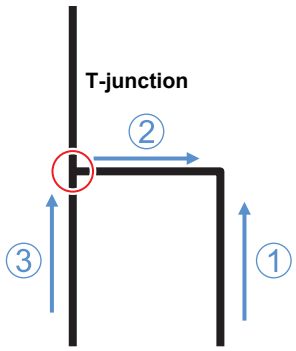


4 Select the [Sample Sequencing] tab.

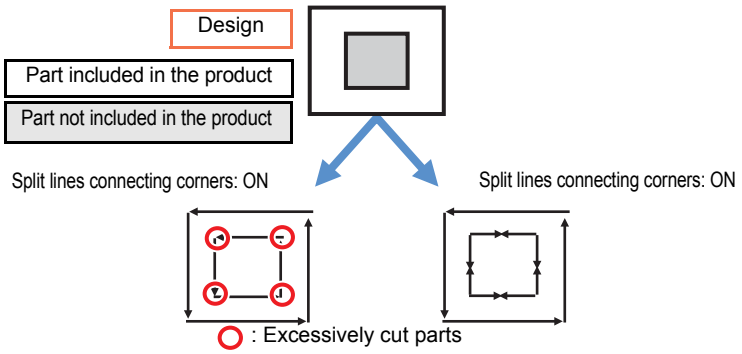


5 Select an option under "Overcut method."

- 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.



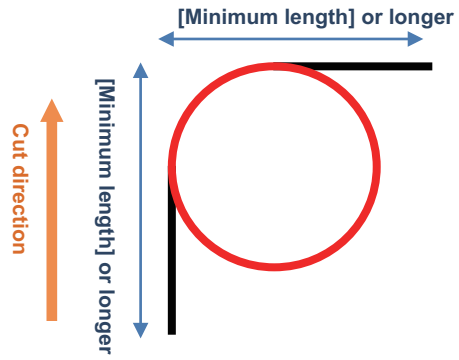
- **Split lines connecting corners:**
  If you turn this option on, the device automatically distinguishes between the "Part included in the product" and the "Part not included in the product," and optimizes the cutting direction to prevent excessive cutting of the product.



NOTE!	♦ This parameter cannot be used together with "Automatically round corners."

6 Configure "Automatically round corners."

- 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.



NOTE!
♦ 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.

NOTE!
♦ 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.

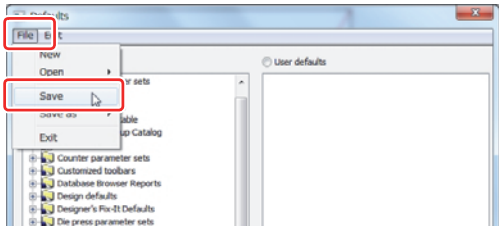
- **Maximum length of cut to over-crease**
  If the length of the cut lines inserted between the creases is equal to or smaller than the value set under [Maximum length of cut to over-crease] when the cut lines and creases are interconnected as shown in the diagram, the creases are output in a single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

NOTE!
♦ 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.2-50)

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.

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

Line type	Tool	Group
Crease	2	1
Tool 2	2	1

● 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.2-11)

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

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.2-7)

- Specify the settings shown in the table on the right for a [CAM tooling setup table] of ArtiosCAD DS.

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 (→ P.1-42).
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.

NOTE!	♦ This setting can only be specified when using CAM output.

1 Setting [Subtype(s)] for line segments by using design (→ P.1-42)

♦ If you frequently use [Subtype] settings, it is useful to register special rule lines as line types whose subtype has already been changed. (→ P.1-43 “Creating the special line type”)

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.2-7 “Configuring a CAM tooling setup catalog”)

NOTE!	♦ If performing output by using a CAM tooling setup catalog, 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]. (→ P.2-7)

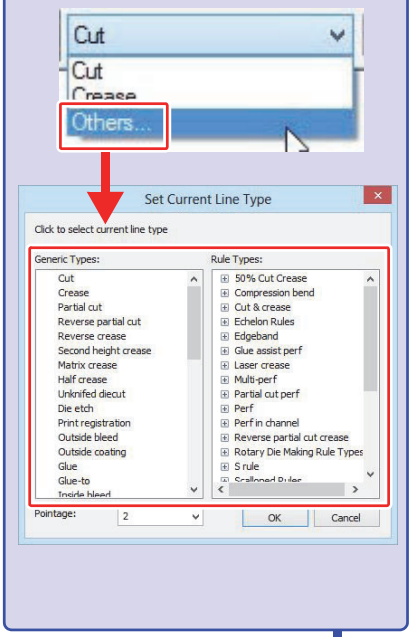
- Specify the settings shown in the table on the right if you want to output the cut line specified by subtype 2 at the end.

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

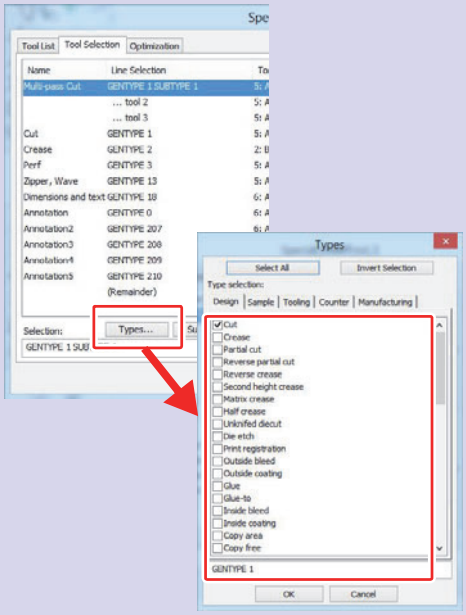
List of Line Types

In ArtiosCAD DS, 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 box are fixed.

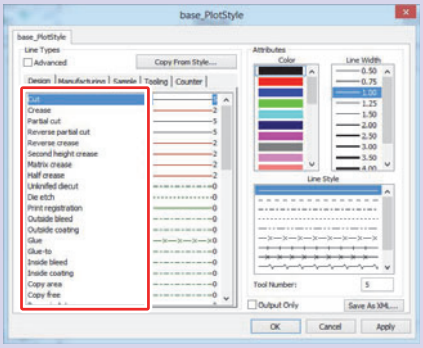
Line type selected from the [Drop-down list box] at the top of the screen



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



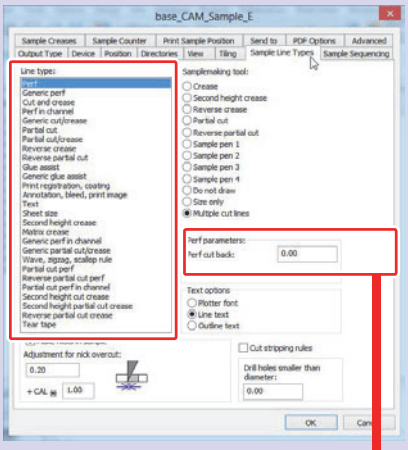
[Option] menu - [Defaults] - [Plotting Style Catalog]



		Names of line types that can be selected from the top of the ArtiosCAD DS screen.	CAM Tooling Setup Catalog	Plotting style catalog	
			[Tool Selection]-[Type]	[Design] tab	[Sample] tab
Generic types;		Cut	Cut	Cut	Sample knife
		Crease	Crease	Crease	Sample crease with grain
		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 perf	Generic perf	Generic perf	- *1
		Generic cut and crease	Generic cut and crease	Generic cut and crease	- *1
Rule types;		Cut & crease	Generic cut and crease	Generic cut and crease	- *1
		50% Cut Crease	Partial cut and crease	Partial cut and crease	- *1
		Perf	Generic perf	Generic perf	- *1
		Zipper	Generic sample rule	Generic sample rule	Sample knife
		Wave	Generic sample rule	Generic sample rule	- *1

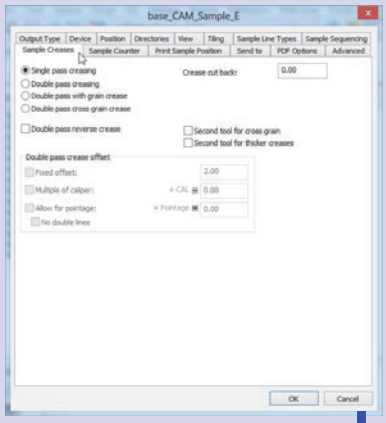
*1. The line styles on the [Sample] tab of the plotting style catalog vary depending on the settings selected by using the [Samplemaking tool] of the [Sample Line Types] tab.

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



Line type: Displayed when perforation

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

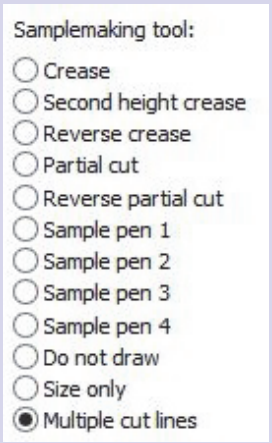


Output		
Sample line type		Sample crease
Line type of the sample line types tab	Affected by perforation cut back	Affected by sample crease
-	-	-
-	-	○
Annotation, bleed, print image	-	-
	-	-
	-	-
	-	-
	-	-
	-	-
Text	-	-
Generic pref	○	-
Generic cut/crease	Cut line only ○	Crease only ○
Cut and crease	Cut line only ○	Crease only ○
Partial cut/crease	Partial cut line only ○	Crease only ○
Perf	○	-
-	-	-
Wave, zigzag, scallop rule	○	-

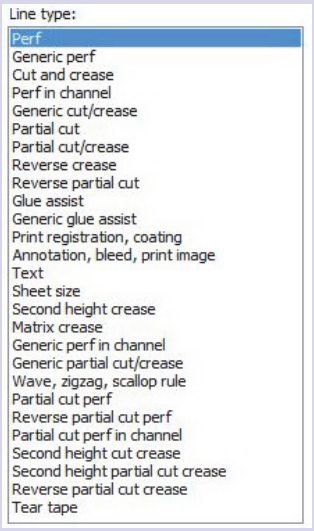
Table: Handled as the locations indicated in the red outline in the Table: Sample Making Tool List.

Sample Making Tool List

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



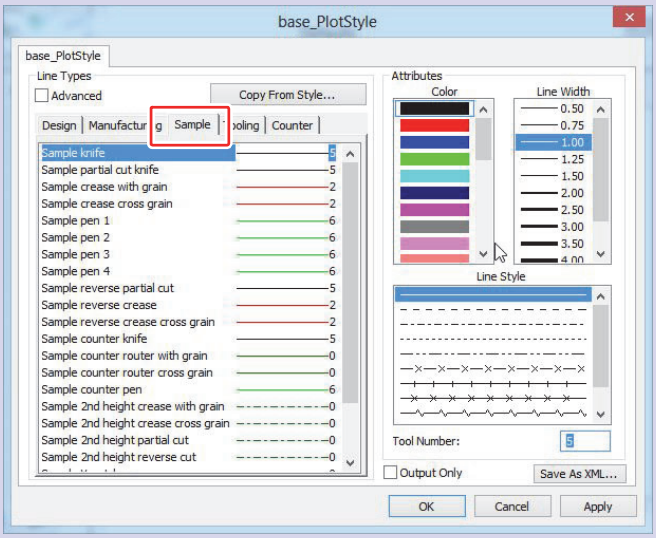
[Option] menu - [Defaults] - [Outputs] - [Sample Line Types] tab



Sample Making Tools	Sample line types that can be specified
Crease	All
Second height crease	
Reverse crease	
Partial cut	
Reverse partial cut	
Sample pen 1	
Sample pen 2	
Sample pen 3	
Sample pen 4	
Do not draw	
Size only	
Sequence of creases then cuts	[Generic cut/crease] [Cut and crease]
Crease then sequence of cuts	
Multiple cut lines	[Generic pref] [Perf] [Wave, zigzag, scallop rule]
Cut	[Wave, zigzag, scallop rule]

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



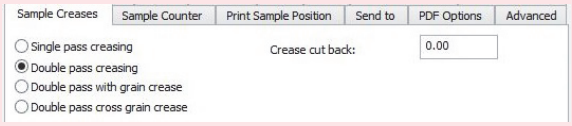
Output method	Name of tool setting item of the plotting style catalog
All the configured line types are output with the "Crease" option.	Sample crease with grain
All the configured line types are output with the second crease tool.	Sample 2nd height crease with grain
All the configured line types are 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

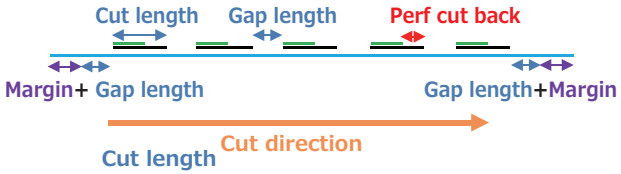
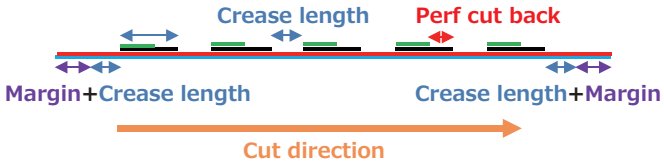
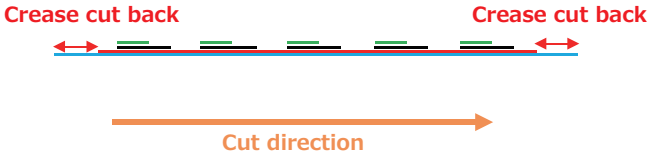
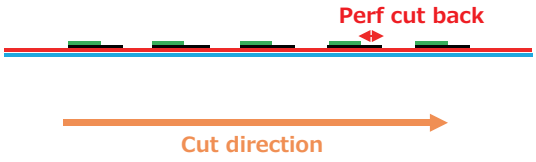
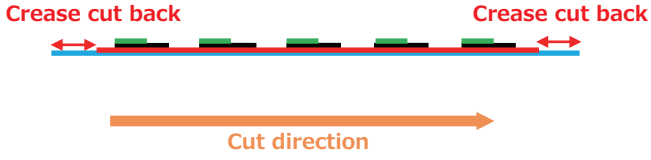
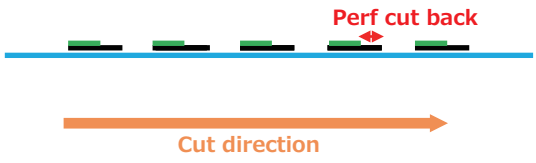
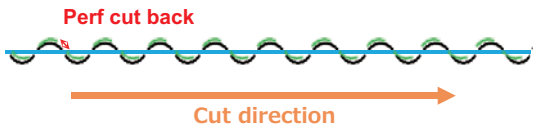
Detailed settings for special rules (For output type: Sample)

ArtiosCAD DS line type	[Sample Line Types] tab		
	Line type	Sample Making Tools	Parameters
Generic perf	Generic notch	Multiple cut lines	Cut length Gap width (Perforation cut back)
Generic cut and crease	Generic cut/crease	Sequence of creases then cuts Crease then sequence of cuts	Cut length Crease length (Perforation cut back)
Cut & crease	Cut & crease	Sequence of creases then cuts Crease then sequence of cuts	Perforation cut back
Perf	Perf	Multiple cut lines	Perforation cut back
Wave	Wave, zigzag, scallop rule	Multiple cut lines	(Perforation cut back)

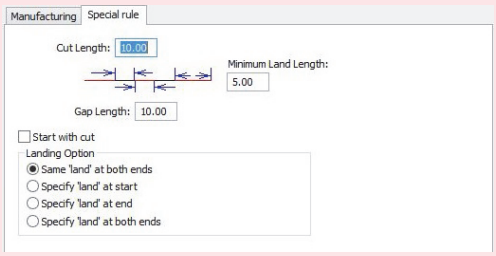
Line segment length in design
Cut line (no perforation cut back)
Cut line (with perforation cut back)
Crease

[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]



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