

Training CAD/ Drawer: Drawer Principles



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Creation Date: 25.10.2019; Last change: 30.01.2020 Used Version: imos iX 2019 SR1



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1. Introduction



Objectives of this exercise

- Get to know the data installation for drawers
- Create your own drawer principles
- Use self-created drawer principles
- Get to know extended setting options for drawers

The abbreviations used

•	СР	Construction Principle
•	ADG	Article Designer Group
•	AD	Article Designer
•	DR	Drawer
•	_C_	Set in the name of data objects instead of "_C_"
		e.g. "M_" for "Miller" to mark the data object as your own.
•	_Customer	This abbreviation is applied for naming folders in the data
		system. Replace this term with your firm's name on your own
		system, e.g. " Miller".

C-Scan Connection ScanDCO Design Catalog Online



2. The Article Designer

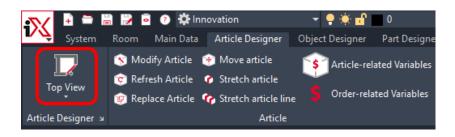
Hint

Details on how to implement points 2.1- 2.3 are in the exercise:

"Create and divide article".

2.1 Start Article Designer

Open the tab Article Designer and click on the button Top View.



Now you are in the Article Designer!

2.2 Save Article

First save the article under a new name.



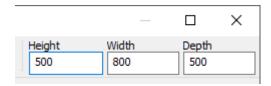
Enter an article name and and end the process with



2.3 Define Size of the Article

Define the size of your article.

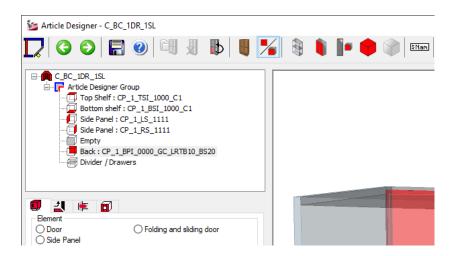
In order to do this, set the following dimensions (in mm): H: 500 W: 800 D: 500





2.4 Create the Box

Create a box with the depicted CPs below.



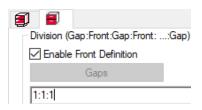
3. Insert Drawers

Select "Divider / Drawers". As no dividers (shelves or dividers) are required, select the tab "Drawers" in the "Settings".



Now in the text field enter in the text field the division of the drawers in this Article Designer Group.

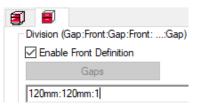
This entry defines in which relation the drawers should be set up in an Article Designer Group.



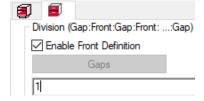


The text field functions like a linear division.

Relative values e.g. 1:1 or 1:1:1 can be entered to construct equally divided drawers.



You can define the relative heights of the drawer front panel, but an absolute division can also be defined. The program adds the required front reveals and gaps from the respective current design parameters.



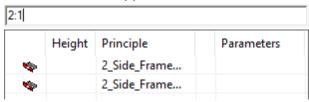
Unlike with the linear divisions, the value "1" is also possible here to insert exactly 1 drawer.



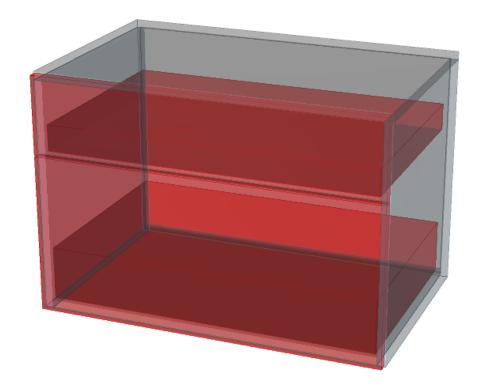
The construction of your DR-Cabinet considers that the bottom drawer is double the size of the top one. Therefore enter "2:1" as the division of the drawers.

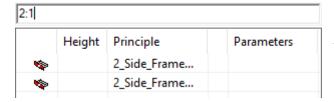


As in the linear division this entry must be closed with "**ENTER**" so that the entered division of the drawers is applied.



The graphical preview shows 2 drawers with different heights in your article.



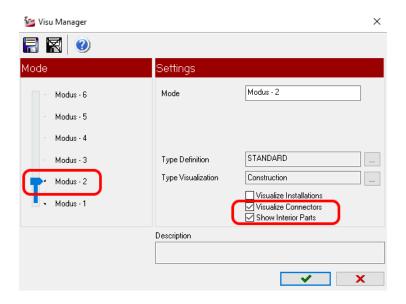


Furthermore, the drawer principle per drawer is displayed in the rows below the text field. This is set in the currently valid construction rule on the basis of the definition.

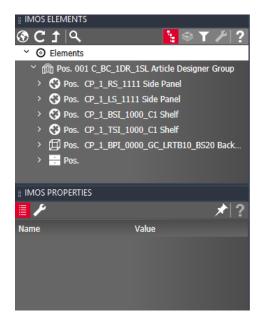


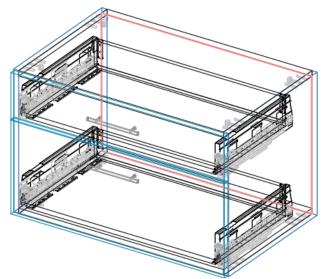
4. Set up the Article in the Graphic

Save your article and set it up in the drawing. Select a visualization without profiles, but with connectors and interior parts.



A visualization with drawers (interior parts) and runner system (connector) appears, which is similar to the image below. Both drawers have been designed with dimensional suitable drawers and Quadro drawer runners.







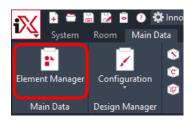
5. Edit Drawers

The construction of your drawer cabinet considers that the top drawer is set up with a twosided drawer system. The bottom one should be built as in-house drawer with runner slides. However, is to be different from the delivery data.

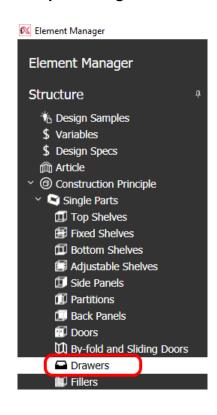
5.1 General points

Before modifying the construction of your drawers, you must know some basic points about the construction of drawers. Therefore, open the **drawer properties** through the following path:

Main Data \rightarrow Element Manager \rightarrow Construction Principle \rightarrow Single Parts \rightarrow Drawers.

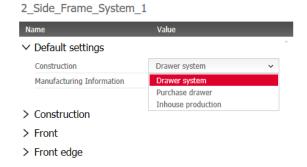


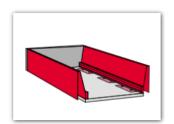




5.2 Construction

An essential characteristic of the drawer principle is the **Construction**. You can find this characteristic under "**Default settings**" tab.







The selection of the construction is relevant for the provided tabs and therefore for the usable characteristic of a drawer principle.

The "Construction" is available for all construction types, the allocation of the remaining tabs is controlled via the characteristic value of the construction system, "Purchase drawer" or "Inhouse production".

5.2.1 Connection Situation

The connection situation of the drawer principle is entered in the tab Connection.

Hint

The name of a drawer principle is quite often identical with the inserted connection situation. This can lead to a misunderstanding that a drawer must be created for every connection situation.

However, the connection situation is only one of the numerous charateristics of a drawer principle.

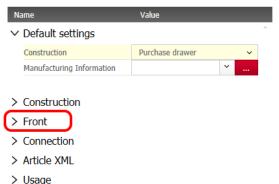
5.2.2 Purchase drawer

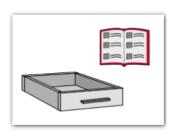
This usually refers to a purchase drawer or a three-sided drawer system drawer. A pantry pull-out is usually "**Purchase drawer**" as well.

The following settings can be made on the tab:

Tab "Front"
 Front filler and pull

2_Side_Frame_System_1







5.2.3 Drawer system

This usually refers to a two-sided drawer system.

The following settings can be made on the tabs:

• Tab "Front"

Front filler and pull

• Tabs "Front edge, Back edge, Shelf"

Front edge, Back edge, and shelf of the drawer



> Construction



- > Connection
- > Article XML
- > Usage

5.2.4 Inhouse production

This usually refers to a drawer where all elements are manufactured in inhouse production. The following settings can be made on the tabs:

• Tab "Construction"

Settings to box size and slide-/box position

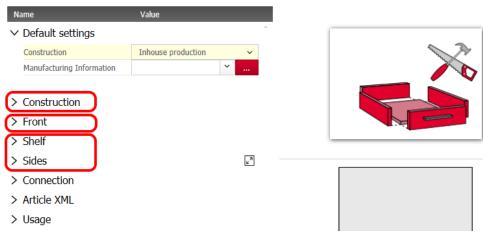
• Tab "Front"

Front filler and pull

• Tabs "Shelf, Sides"

Drawer bottom, back, front, and sides

2_Side_Frame_System_1



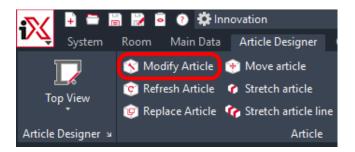


6. Create and apply Drawer Principles

Please, leave the drawer properties to return to the drawing area.

6.1 Modification and Insertion of Two-sided drawer system

For fitting a drawer principle to the top drawer, open the tab "Article Designer" and select "Modify Article".



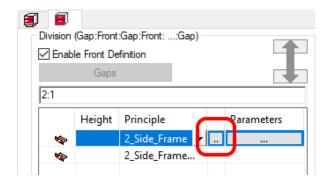
Select the article on the top drawer front. The Article Designer opens and the selected drawer is directly pre-set for modifying.

Tip

lect an article

Especially with very complex Article Designer Constructions it is useful to select an article for modifying directly on the part where the article should be modified.

Click on the small 3-Point-Button of the top drawer.



Thereby the drawer properties are directly opened out of the Article Designer and the drawer principle "2_Side_Frame_System_1" of the folder "Getting Started" is selected.

To assign a two-sided drawer system, proceed again in the typical steps of data maintaining.



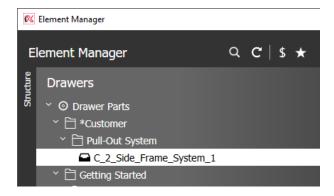
Hint

The typical steps of the data maintaining:

- Select a similar drawer principle
- Change the name of the selected drawer principle
- Save the new drawer principle
- Create a new folder "*Customer"
- Drag your new drawer principle into the new folder
- Change the characteristic values
- Save the new drawer principle
- Leave the drawer properties with "Apply"

Select the drawer principle "2_Side_Frame_System_1", rename it to "C_2_Side_Frame_System_1" and save the new principle.

Create the customer specific folder "*Customer" with the desired subdirectories and move the new principle to the desired folder.



Now you can adjust the characteristic values of your new drawer principle.

6.1.1 Tab "Connection"

With the connection situation select the pull-out system of the drawer principle. In this case, this should be stored as "**Pull_Out_System**".

Hint

Even if the connection situation has the value "Pull_Out_System" from Getting Started-delivery data, the search of the Connection Scan is not limited to Getting Started-Connector sets. However, the prerequisite is that you have loaded and installed the DCO Catalogs, for example, Hettich, Blum, Grass etc. and the characteristic values of the connector sets match with your construction.



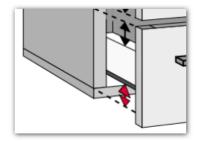
6.1.2 Tab "Construction"

Now in the tab "Construction" change the distances of the frame to the top-/bottom shelf and top-/bottom edge of the front fillers as shown in the screenshot below.

> Default settings

∨ Construction

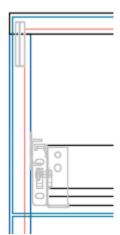




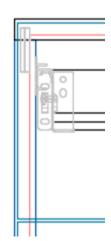
Leave the **Inner drawer positioning** "from below". In this way the drawer system is inserted as far as possible down.

With the setting "from above" the drawer system is inserted as far as possible to the top, which is not really wanted for low frames. Try the setting "from above" out once.

Setting: "from below"



Setting: "from above"





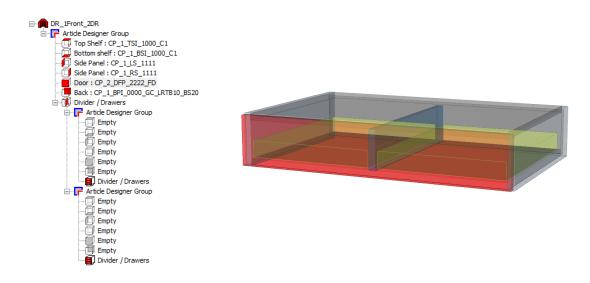
6.1.3 Tab "Front"

Here you can define if your drawer principle should create a front filler or if the drawer should be connected to a front which is already in the ADG.

Hint

Here is an example for the entry "Connect with neighbour element":

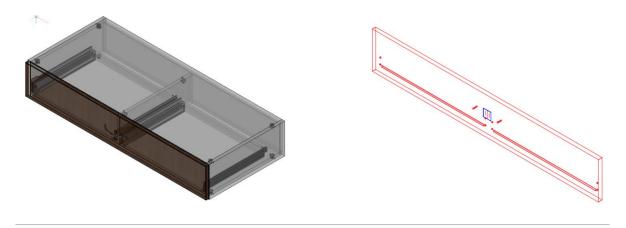
· Cabinet with 2 insertion zones for drawers, but with onset front fillers



Drawer principle "Connect with neighbour element"



The drawers connect with the onset front fillers.





Leave the setting as it is for the construction...

∨ Front



... so that your drawer principle creates a front filler for the drawer on the basis of the Variables "\$PD_Drawer_Front_1".



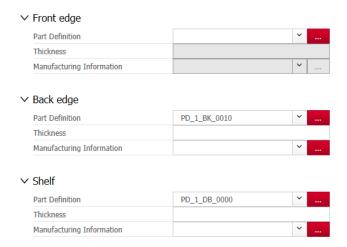
Here you can see that it is referenced from the PD of the drawer front.

You can assign up to 3 pull principles for every drawer front on the tab "**Front**". In this case, leave it with the entered pull principle, that a pull is positioned in the centre of the drawer front.



6.1.4 Tabs "Front edge, Back edge, Shelf"

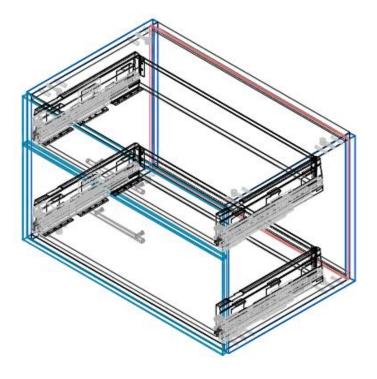
On the tabs "Front Edge", "Back Edge" and "Shelf" you can define the PD for the elements, which do not deliver the connector set of the two-sided drawer system. This is normally the drawer shelf and drawer back panel.





Save this drawer principle and assign it to the top drawer by leaving the drawer properties.

Save your article and your article can be set up again in the drawing area.

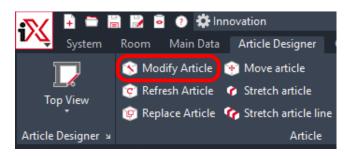


Tip

You can also use this drawer principle if you want to use a connector set which has a steel back panel, for example. Select e.g. the top drawer front and start the Connection-Scan in the methods of the imos Properties.

6.2 Modification and Insertion of the Inhouse Production Drawer

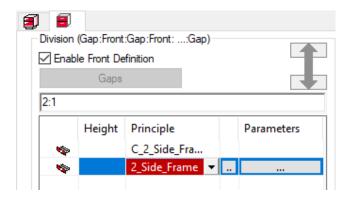
Now you are in the drawing area. To provide the bottom drawer with a drawer principle, open the tab "Article Designer" and select "Modify Article" again.





Select the article on the bottom drawer front. The Article Designer opens and the selected drawer is directly present for modifying.

Click on the small 2-Point-Button of the bottom drawer.



Thereby you open the Element Manager and the drawer principle "2_Side_Frame_System_1" of the folder "Getting Started" is selected.

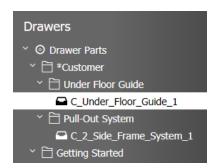
The bottom drawer should obtain a drawer principle with the construction "Inhouse production" and the connection situation "Under_Floor_Guide".

Hint

The typical steps of the data maintaining

- Select a similar drawer principle
- Change the name of the selected drawer principle
- Save the new drawer principle
- Create a new directory "*Customer"
- Drag your new drawer principle into the new directory
- Change the characteristic values
- Save the new drawer principle
- Leave the drawer properties with "Apply"

Rename the drawer principle "Under_Floor_Guide_1" to "C_Under_Floor_Guide_1" and save the new principle. Move it to the customer-specific folder "*Customer".

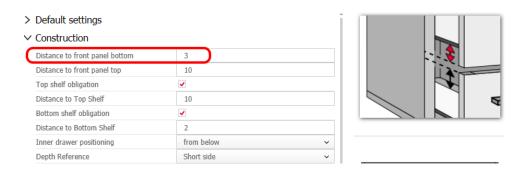


Now you can adjust the characteristic values of your new drawer principle.

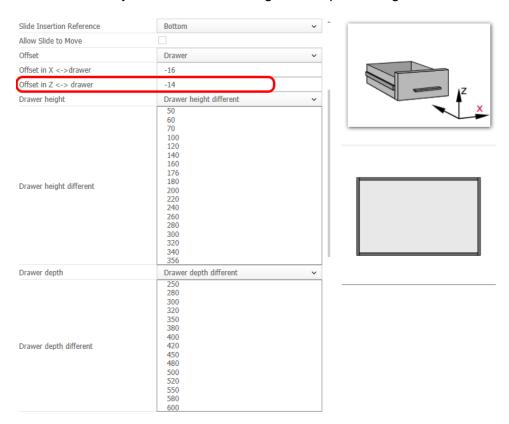


6.2.1 Tab "Construction"

Change the distances to the frame to the top-/bottom shelf and to the top-/bottom edge of the front panel as shown in the screenshot below. Leave the inner drawer positioning as it is "**from below**". The drawer is inserted as far as possible into the bottom.



In the same tab you can find the settings for the positioning of the drawer and the slide.



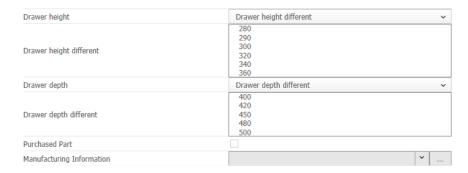
In the **top area** the positioning of the slides can be set. As you are using a drawer runner, leave the setting on "**bottom**".

In the **middle area** the offset of the drawer or slides can be defined in X- or Z-direction. This setting can only be entered here symmetrical for right and left

In the **bottom area** define the limitations of the drawer dimensions. You can either define a fixed dimension or several valid values. The program compares the dimension of the insertion zone, furthermore, considers the distances to the shelves and to the frame from the tab "**Construction**" and inserts the biggest possible drawer.



Change the values for the drawer height and the drawer depth to obtain the result as shown below.



Your drawer principle is now set to only construct drawers with the height of **280mm – 360mm** and the depth of **400mm – 500mm**.

At the bottom in the tab "Construction" you can set the Inhouse production as purchased part. By doing this, you avoid the output of parts in the part list and obtain the drawers on the purchased part list.



6.2.2 Tab "Front"

You already know the setting options of the tab "Front" from the definition of the drawer principle for the top drawer.

6.2.3 Tabs "Shelf and Sides"

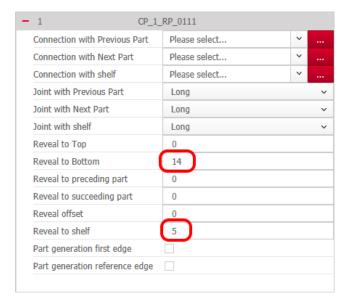
You also know the tab "**Shelf**" and "**Sides**" from the previous exercise, but with a drawer principle with the construction "**Inhouse production**" you obtain setting options which are considerably different to the frame system.

Here assign the desired CP (Front/Back, Sides) or the desired PD (Base) to every element.



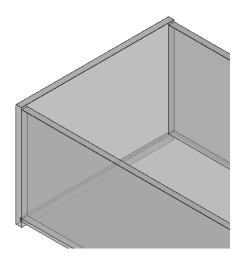


Furthermore, you can set the oversize and inset for front/back and the sides. You also can add a connection situation to the previous part or the next part.



With the current settings of your drawer principle the program creates a drawer as shown as follows.

- With front
- Base grooved in the sides
- Base under front and back



Set the elements so that the following drawer is generated.

- Without front
- Base grooved in the sides
- Base grooved in the back



6.2.3.1 Front

Delete the CP of the front. Under Sides tab, remove the first CP.

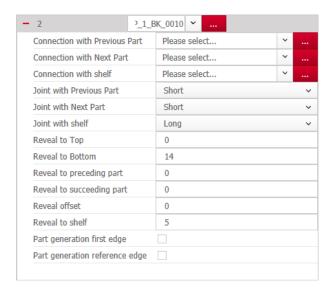


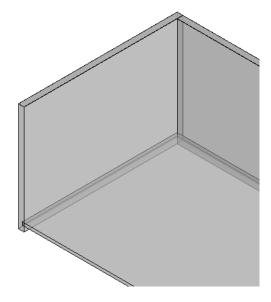
6.2.3.2 Sides

Do not make any modifications on the sides but remember the settings of the oversize.

6.2.3.3 Back

Enter the same oversize as for the sides and select the value "**long**" as the joint to the base here.







Save your modified drawer principle and then return to the drawing via the Article Designer. Now you have a drawer in the desired definition.

Go to your new drawer principle "C_Under_Floor_guide_1" via the Article Designer again to add a connection situation.

6.2.4 Connection Situation

Enter the required information about the connection situation to previous/next and to the base to be used for the parts of the drawer. Proceed with the parts one by one in sequence and assign the desired connection situations.

6.2.4.1 Front

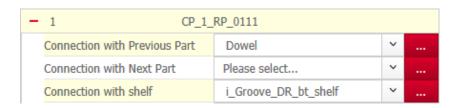
As the front does not exist, you don't have to change something here.

6.2.4.2 Sides

The sides require connection situations to the front filler (Previous/ Next).

Set the left and right side as displayed below.

Leave "i_Groove_DR_bt_shelf" as the connection situation between side and base.





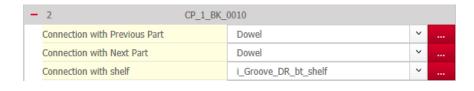




6.2.4.3 Back Panel

The back panel has been set with the same oversize to the bottom and therefore the back panel must be connected with the base via the connection situation

"i_Groove_DR_bt_shelf".







Tip

To quickly assign the connection situation "i_Groove_DR_bt_shelf". Select one of the sides and click there on the 3-Point-Button under connections. You find yourself directly on the connection situation "i_Groove_DR_bt_shelf". Now add this connection situation to the favorites (Right-click → Add to favorites). Close the Element Manager.

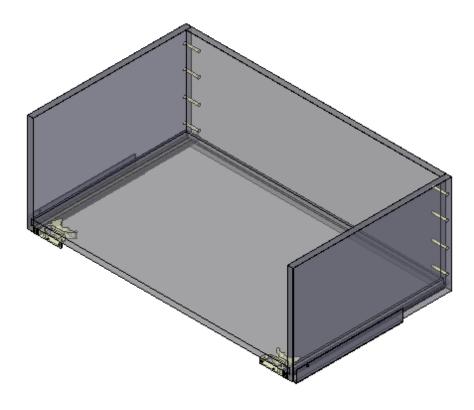
Now you can select the back panel again with the 3-Point-Button next to the connections → click base and then select the connection situation shelf "i Groove DR bt shelf" in the Favorites list.

All settings have been made. Save your drawer principle and leave the drawer properties with "Apply".

Afterwards save your article and leave the Article Designer with



Now your drawer should contain the entered connectors and their machining.

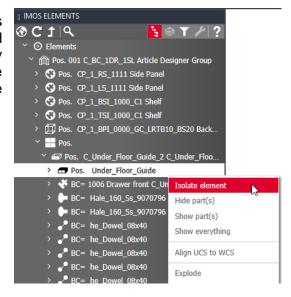






Tip

The display of the drawer above appears when you select the parts of your drawer and then isolate them (Context menu opens by right-clicking on the selected element in the imos Elements → Isolate element → Move mouse in the drawing area).



6.2.4.4 Task

Task



Before getting to know the further setting options in the Article Designer, check how your article responds to the different height and depth dimensions during the entry. Only drawers with the defined dimensions mentioned in chapter in "**7.1.1**" are generated. Note that the insertion zone is divided in the relation 2:1 by the bottom and the top drawer.

- Cabinet dimension: H= 500mm; D= 500mm
- Drawer dimension: H= 300mm and D= 440mm

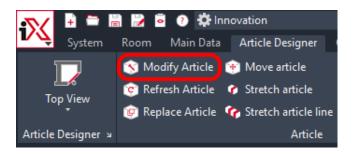
Set the deviating cabinet dimension and evaluate your result.



7. Further Setting Options in the AD

First show all elements of your article in the drawing area again (Right-click in drawing area → Isolate → Show Elements).

For getting to know more setting options for drawers, open the tab "Article Designer" again and select "Modify Article".



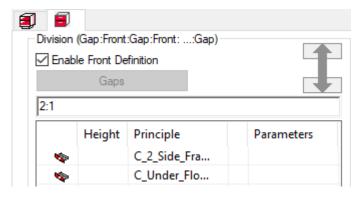
Select the article from one of the drawer fronts. The Article Designer opens, and the selected drawer is directly presented for modifying.

Hint

All setting options described in this exercise are for all drawers which have been defined in an insertion zone via the division in the text field.

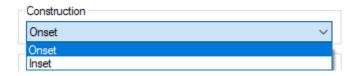
If you want to apply one of these settings for only 1 drawer, then you are only allowed to construct 1 drawer per insertion zone.

Separate insertion zones can be created for every individual drawer by inserting virtual dividers.



7.1.1 Construction

In the area "Settings" under "Construction" you can define if the drawer should be constructed onset or inset.



With this adjustment the dimensions of the insertion zone change and therefore it is possible that the program sets up another drawer size and the C-Scan inserts another connector set.



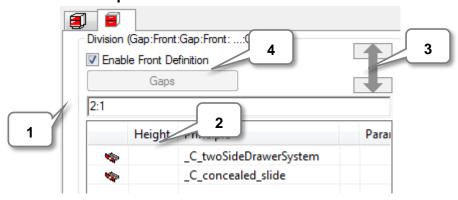
7.1.2 Type of Construction

In the area "**Settings**" under "**Type of Construction**" you can set how the drawers should be generated according to the conditions.



Depending on the setting, the drawers are differently generated.

7.1.3 Gap Dimension and Front Reveals

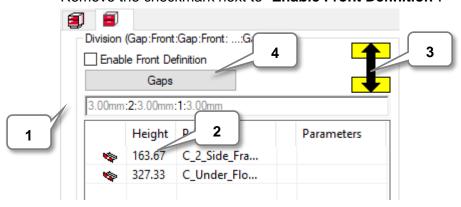


As long as the checkmark is set on "Enable Front Definition", the gap dimensions and front reveals are used from the currently valid Design Parameters.



The term "Front Definition" can be set the same as the term "Design Parameter".

Remove the checkmark next to "Enable Front Definition".



This means that the Design Parameter for the drawers of this insertion zone is not more valid and the horizontal and vertical gaps and front reveals must/can be manually defined.

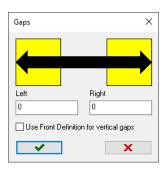
Compare the modifications in both screenshots above:

- The drawer division only contains editable gap dimensions (1)
- The height of the front is exactly indicated (2)
- The symbol for the horizontal gaps is shown (3)
- The button "Gaps" for setting the vertical gaps is selectable (4)



Click on the button "Gaps" (4) for setting the vertical gaps. The setting dialog appears for the front reveals left and right.

Here you can enable the Design Parameter (=Front Definition) for the vertical gaps (without refernce to the horizontal gaps) again or define special front reveals right and left.

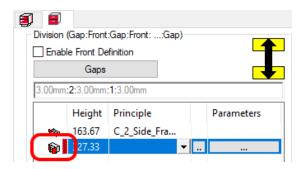




As drawers are only positioned one above the other, the definition of vertical gaps is not necessary.

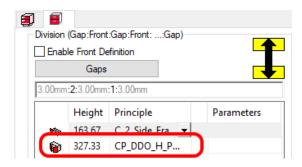
7.1.4 Door or Flap instead of Drawer

With disabled Front Definition you can replace a drawer principle with a Front-CP. For example, a door or a flap defined in their dimensions by the drawer division can be inserted in a Front Definition.



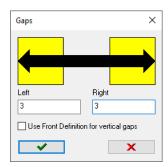
Click several times on the desired drawer symbol so that it can switch back and forward between "**Drawer**" and "**Door**".

If the symbol shows a door, you can assign a door or a Flap-CP by clicking on the small 3-Point-Button.Select "CP_DDO_H_PT_FD"

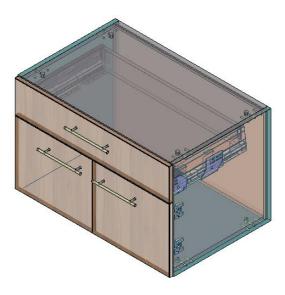




Additionally you have to enter a value for the gaps.

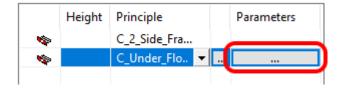


As a result, you obtain an article with a **double door** instead of a full extension runner, with dimensions correspond to the set front definition.



8. Additional Setting Options per Drawer

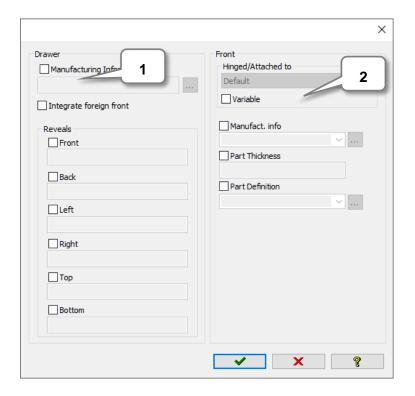
By clicking on the right 3-Point-Button, a dialog opens where further details to the drawer can be stored.



The left column (1) contains further setting options for every individual drawer which articlespecifically overwrites or adds the settings from the drawer principle. This may save creating separate drawer principles for single articles.

In the right column (2) if you have inserted a door or flap instead of a drawer described in the chapter "7.1.4 Door or Flap instead of a drawer" above, you can overwrite the characteristic values of the selected Front- CPs.





9. Refresh Article in the Drawing area

Set your article so that it uses both new created drawer principles and leave the Article Designer towards drawing area.

