CATIA V5 R23

Drafting Module - Hatchings

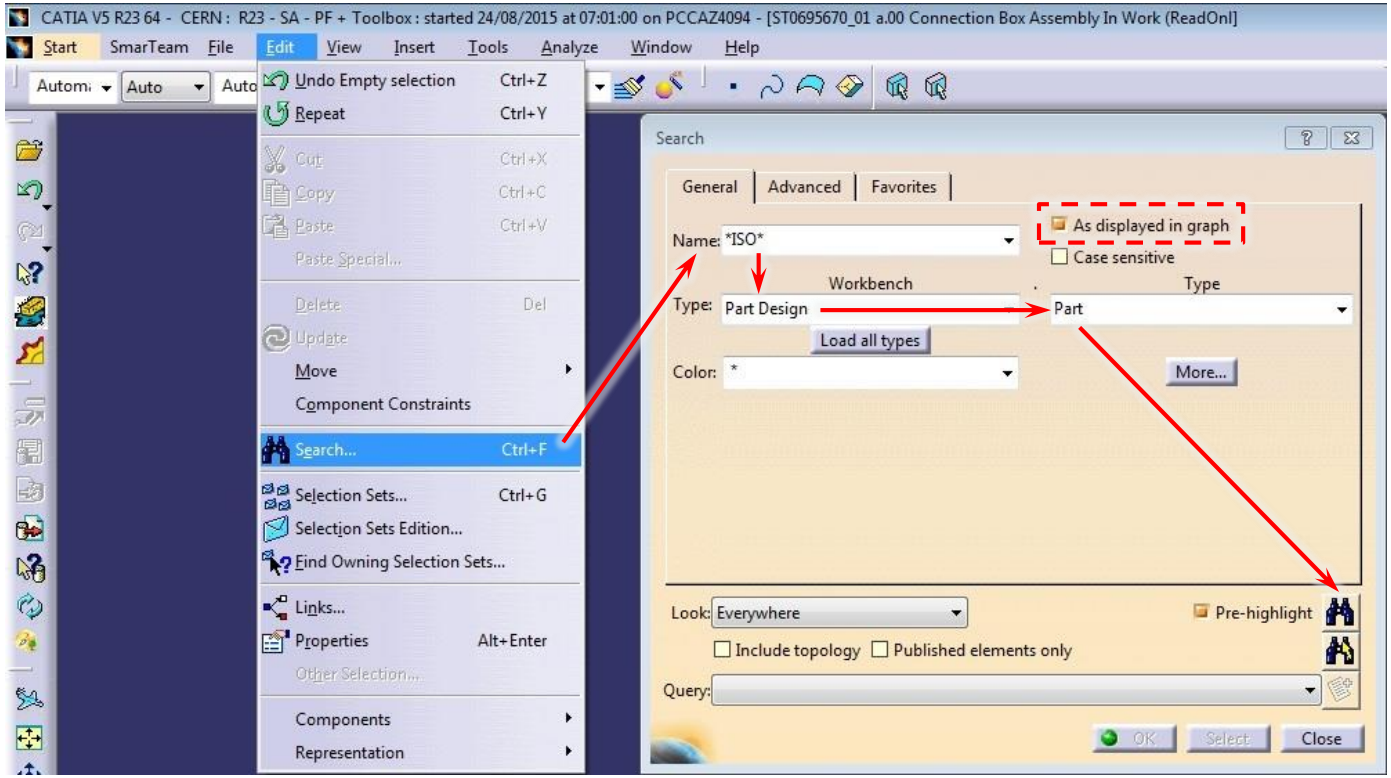
Drawings quality improvement

Table of Contents

1 - How to select elements not to be cut in a 2D section view

1st Method - The "Search" tool (Ctrl + F) from your assembly :

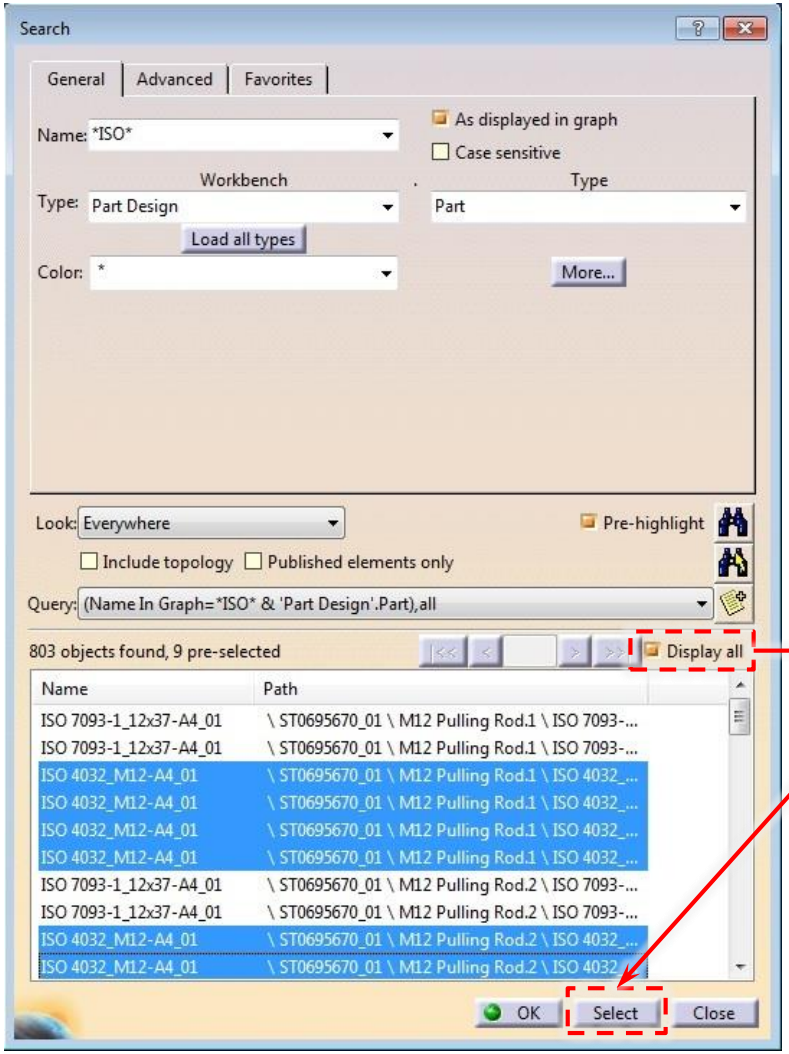
Go to the Edit menu and select the "Search…" tool or type the shortcut Ctrl+F



Then type *ISO*, *Screw*, *Nut* or any other inquiry in the "Name" field, select "Part" in the "Type" field and launch the search.

Note : You can combine several keywords and save your search string.

1 - How to select elements not to be cut in a 2D section view



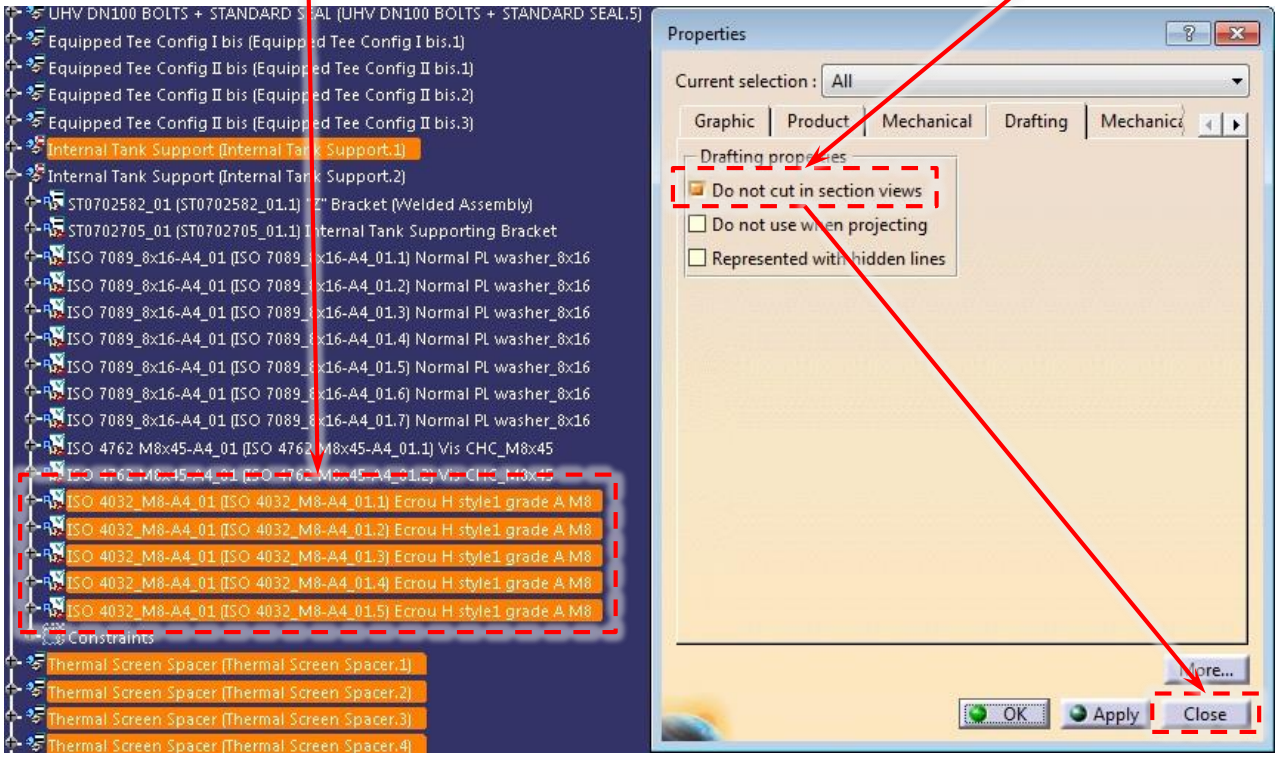
Find out more information regarding this powerful tool in the dedicated FAQ or consulting the Catia Help.

Tick the "Display all" option then select the desired components in the list and click "Select"

1 - How to select elements not to be cut in a 2D section view

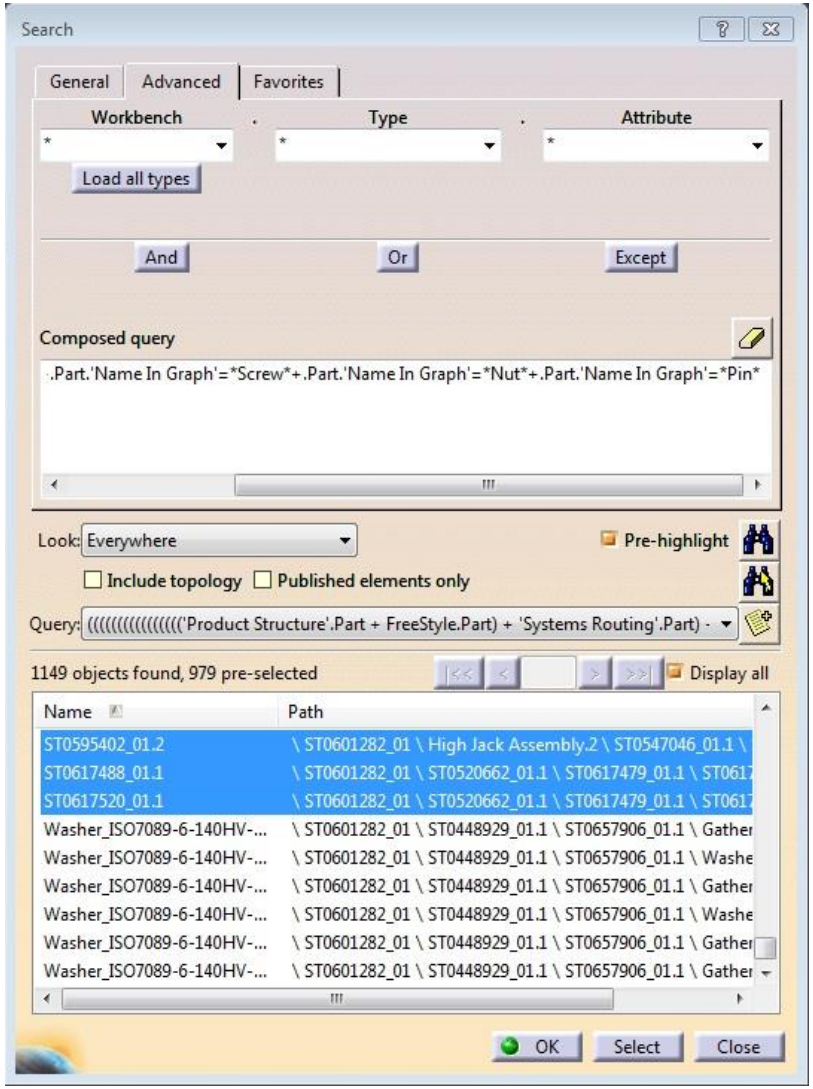
Select one of the highlighted elements in the Catia tree and make a right click on it, then select "Properties" → go to the "Drafting" panel

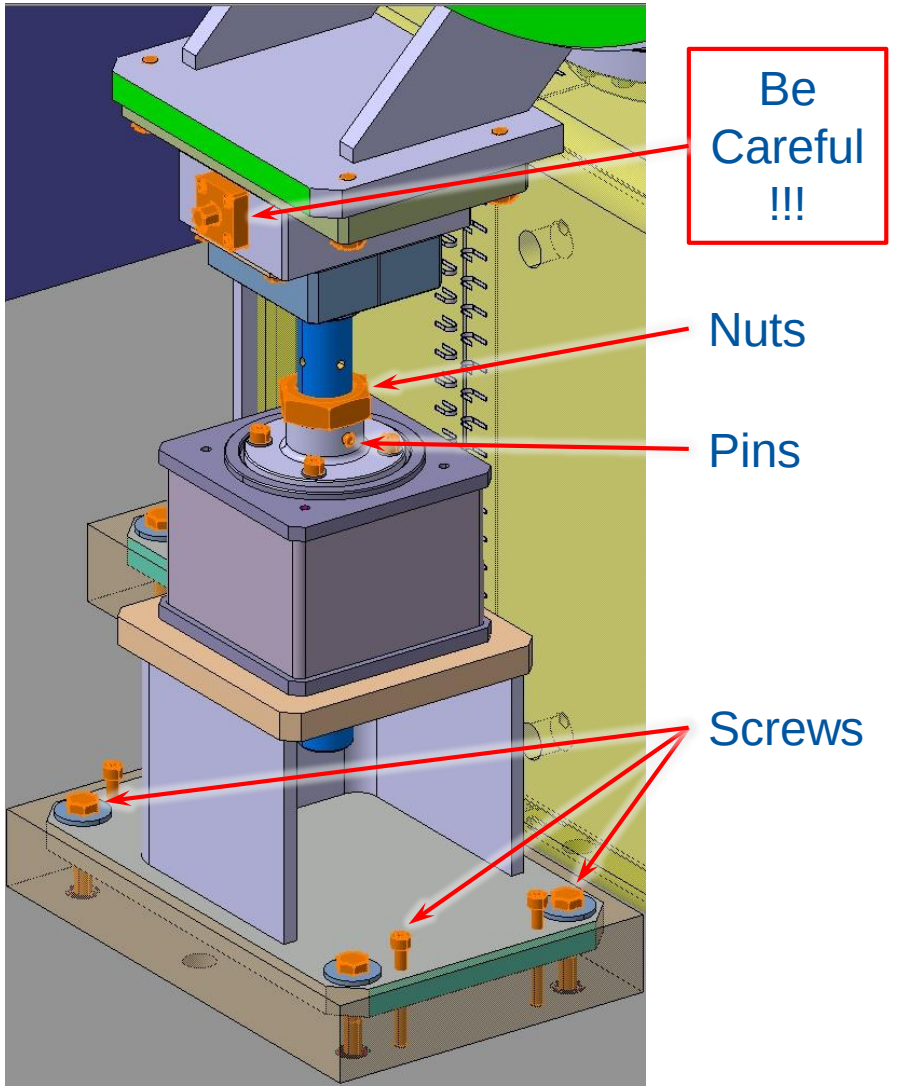
Tick the "Do not cut in section views" option and close the window. Save your product once you are done with the selection of the components.



1 - How to select elements not to be cut in a 2D section view

Example of an advanced search :

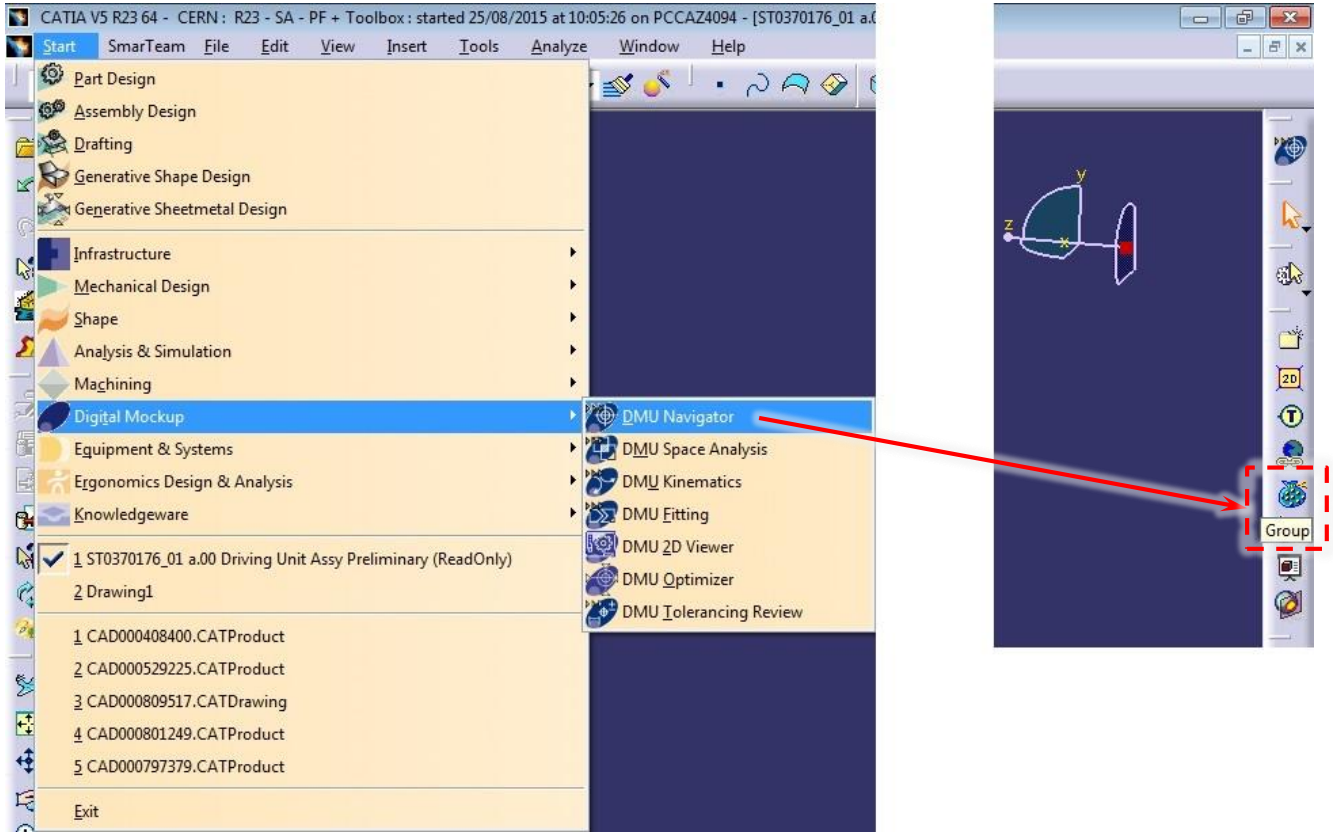




1 - How to select elements not to be cut in a 2D section view

2nd Method - The "Group" tool :

Go to the Start menu and select the Digital Mockup → DMU Navigator workbench. Then click on the "Group" icon



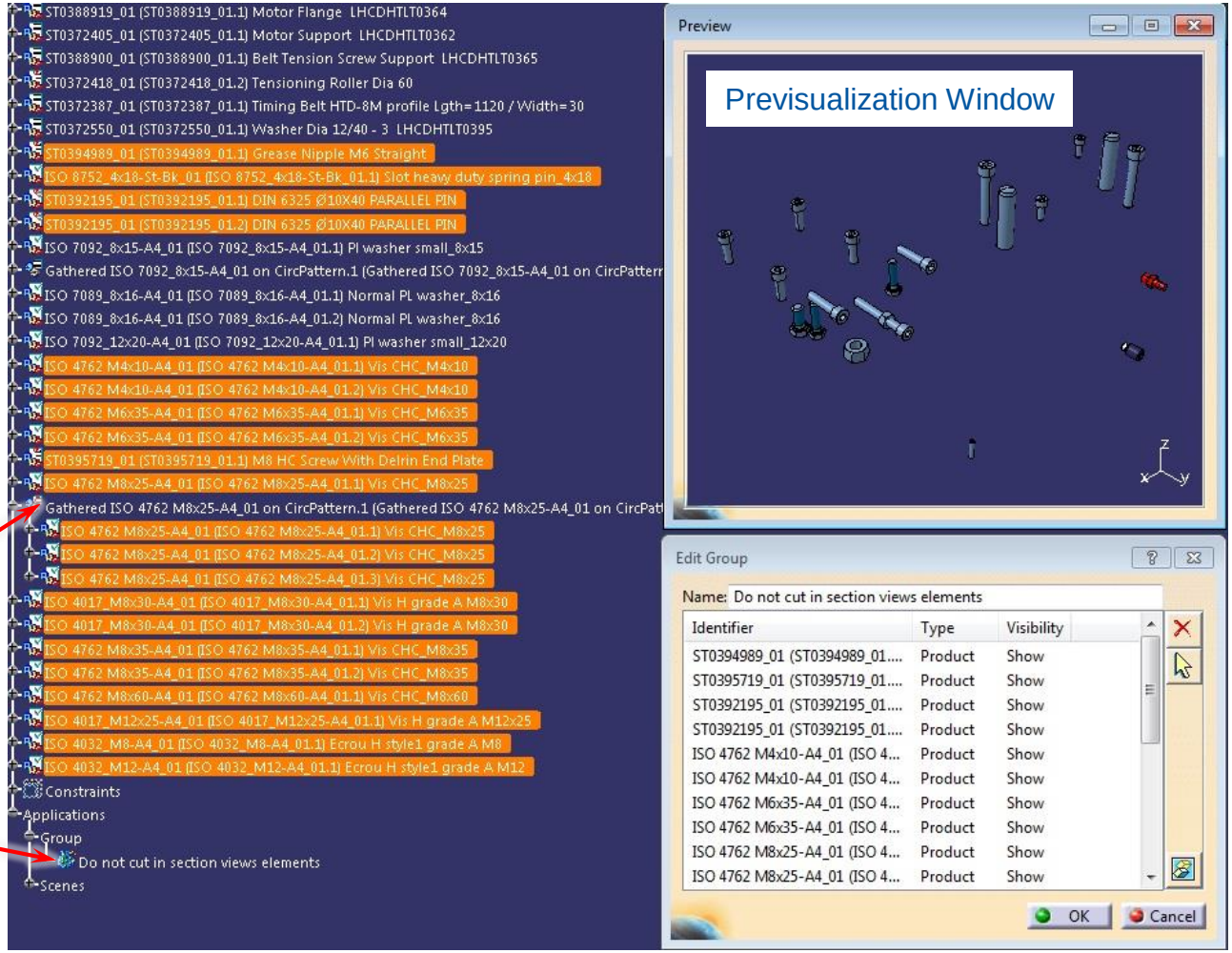
1 - How to select elements not to be cut in a 2D section view

Select all the components not to be cut in section views in the Catia tree structure or directly by selecting them graphically on 3D the model.

Do not select components, products or gathered reuse patterns.

Only the instances of Parts

A group has been created in the tree



Group components' list

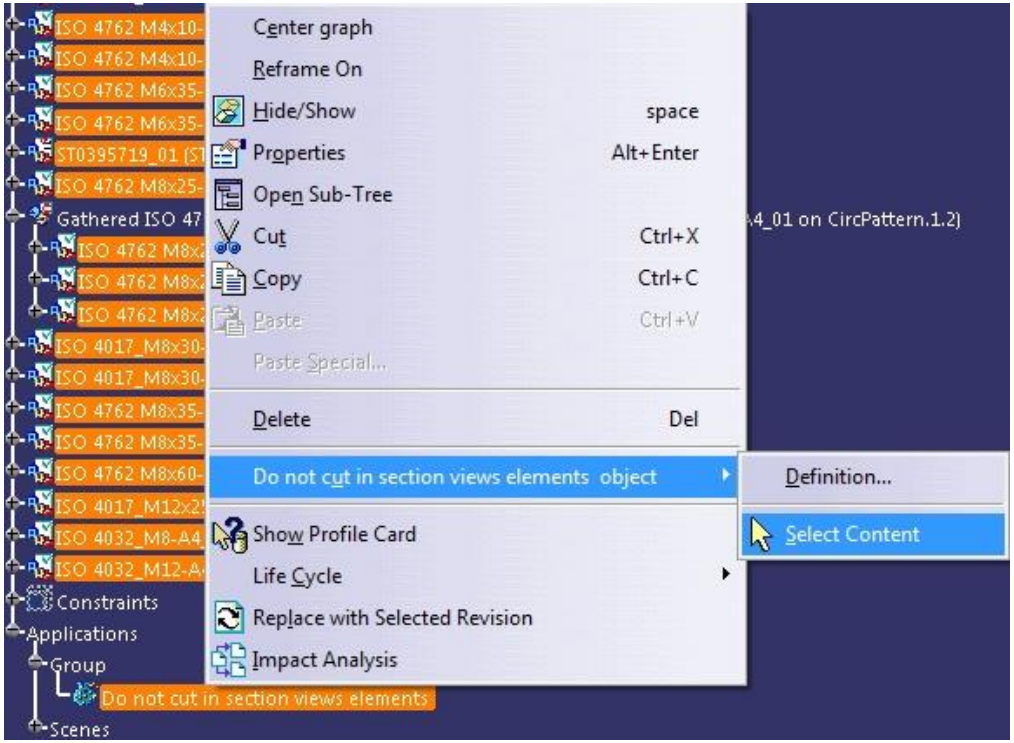
1 - How to select elements not to be cut in a 2D section view

Then proceed to a right click on the group

Select the "*Group Name* object" sub-menu

Click on "Select Content"

Once your components are selected, perform a right click on one of them and go to "Properties" → go to the "Drafting" panel → Tick the "Do not cut in section views" option



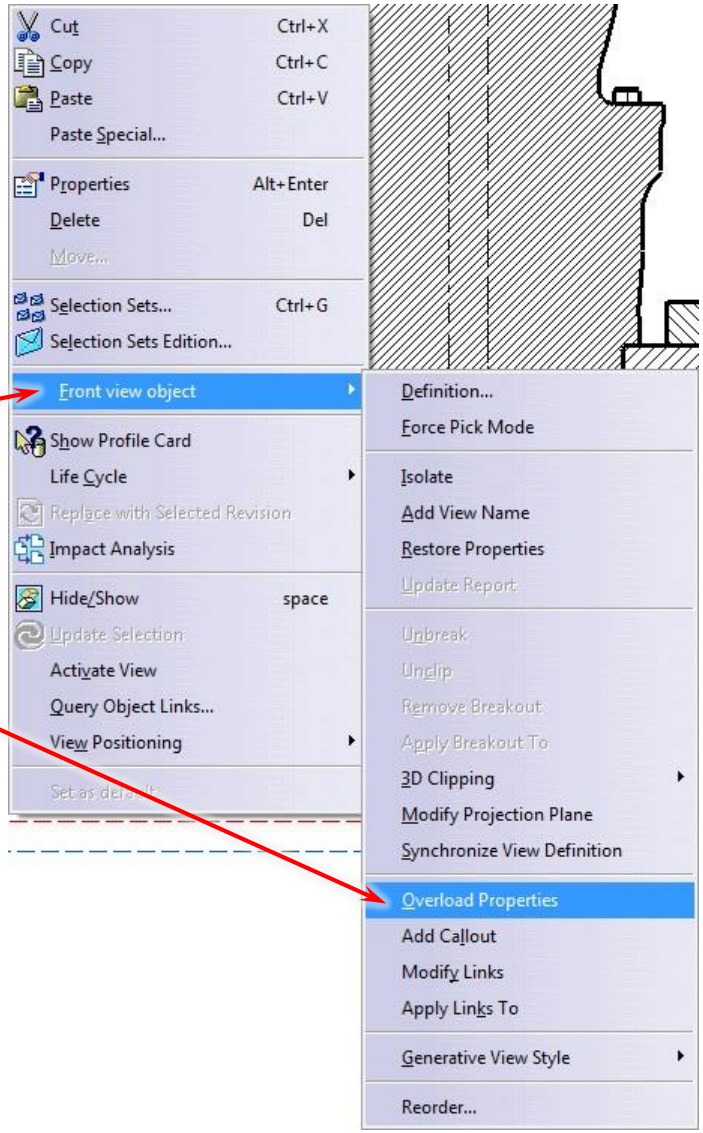
1 - How to select elements not to be cut in a 2D section view

3rd Method - The "Overload Properties" conventional tool :

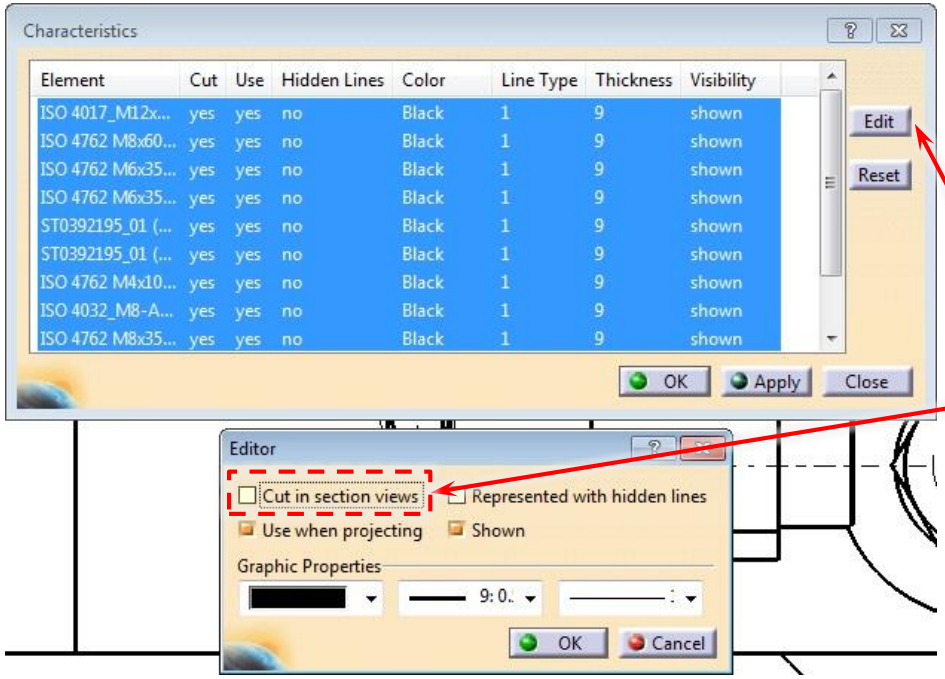
Once your section view is created, perform a right click on the view frame or on the view name in the Catia tree structure

Select the "*View Name* object" sub-menu

Click on "Overload Properties"



1 - How to select elements not to be cut in a 2D section view



Select graphically all the elements you don't want to cut

Click on "Edit"

Untick the "Cut in section views" option

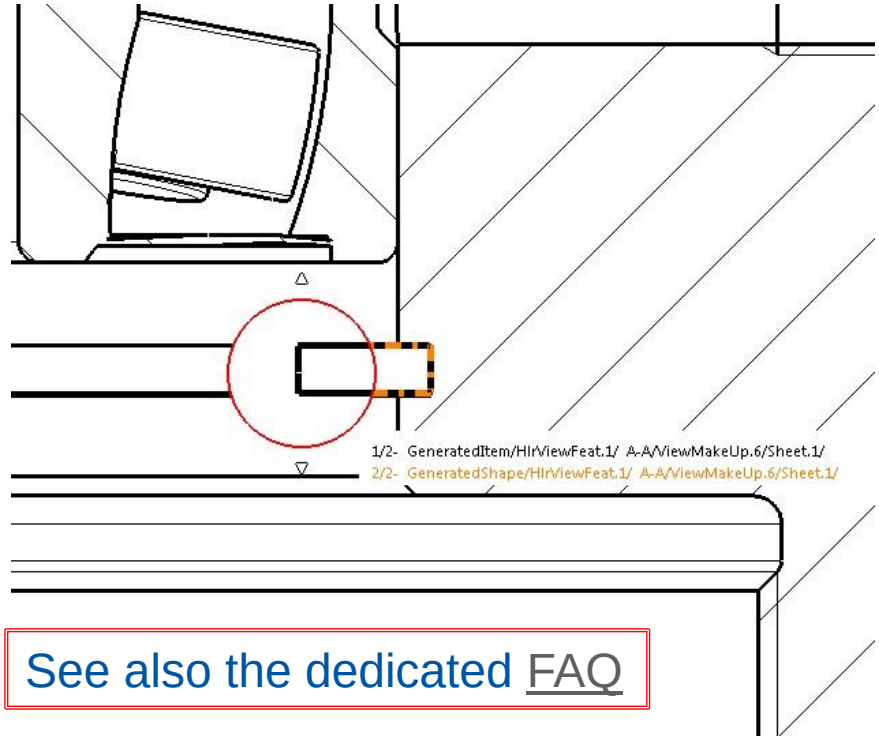
Drawback : this method has to be applied independently on each views.

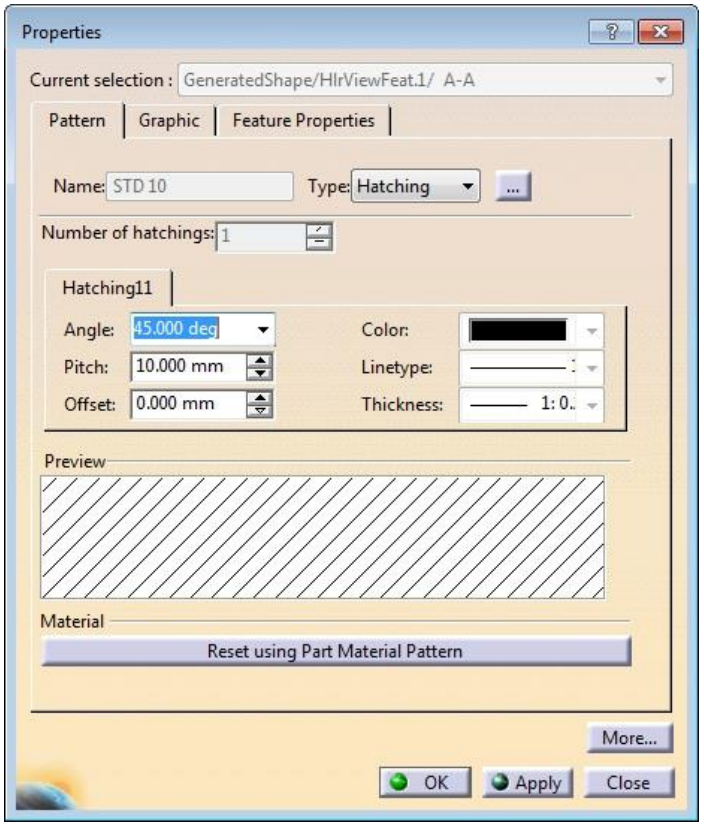
Advantage : the responsible of the drawing doesn't have to be also responsible of the 3D.

2 - How to select non hatched zones

1st Method - The "Preselection Navigator" tool (keyboard arrows) :

Position your pointer over an edge of the non hatched zone you want to select.
Press any keyboard arrow (up ↑, down ↓, right → or left ←).
You can also press Ctrl + F11 or press Alt + the left mouse button.
Use the arrows until the non hatched zone is pre-selected, then proceed to a right mouse button click and go to "Properties" → "Pattern" tab and modify the hatching graphical properties.





See also the dedicated FAQ

2 - How to select non hatched zones

2nd Method - The "Swap to visible space" trick :

When there are a lot of non hatched zones to modify, here is a little trick which can helps you spare a lot of time.

Create your section view. As soon as it's created, proceed to a search of all the hatchings of the section as follows :

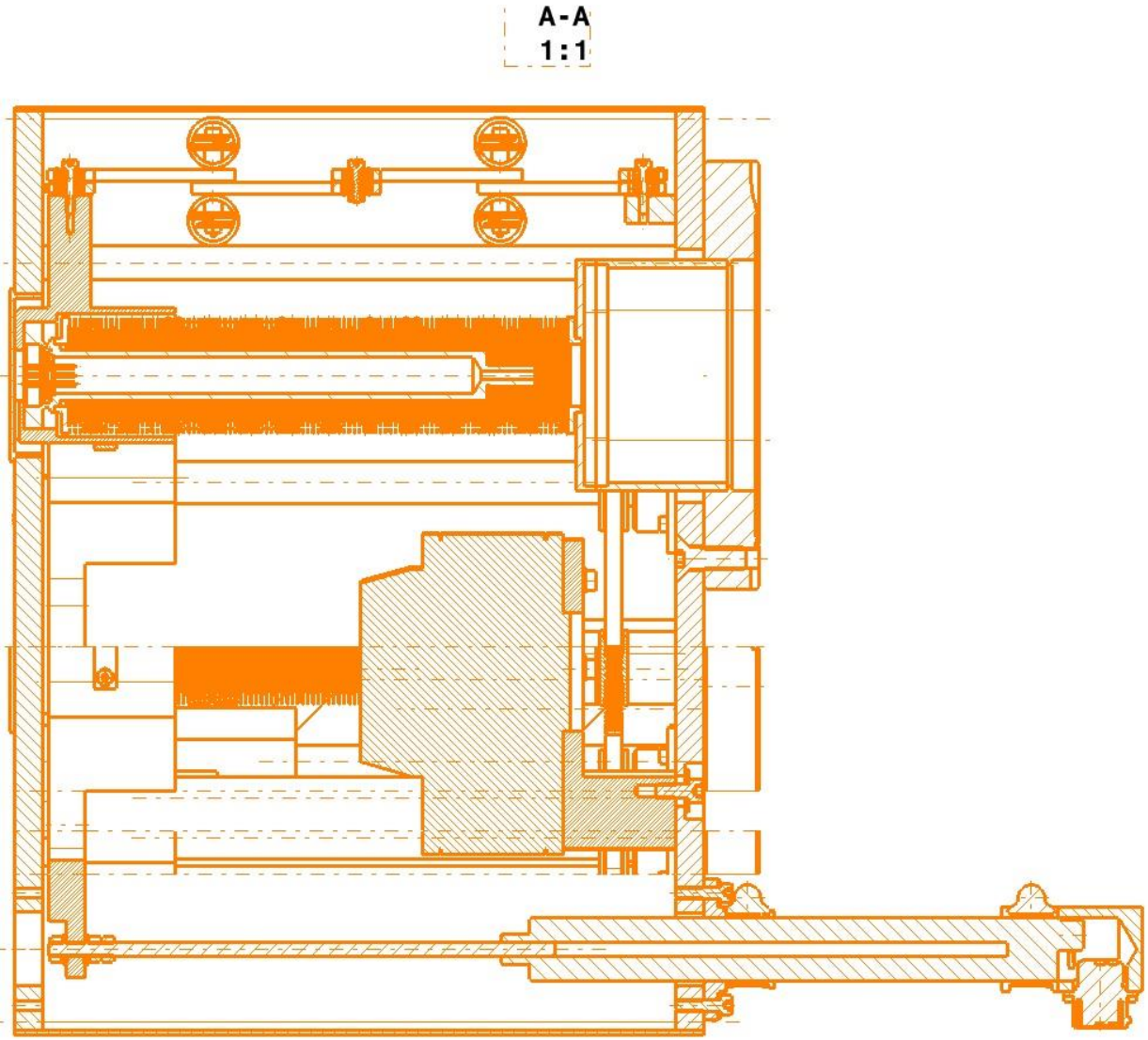
Select the Section view by clicking on its frame or directly on its name in the Catia tree structure

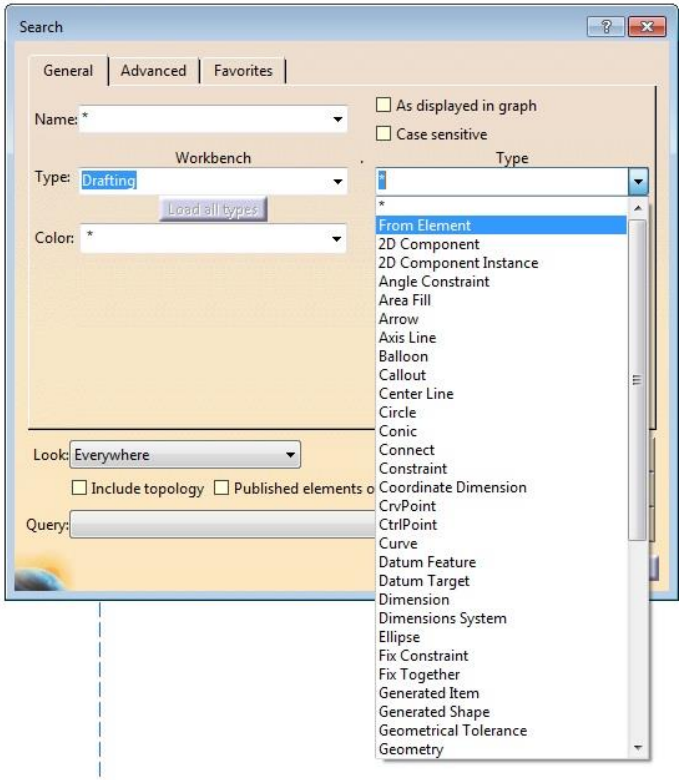
Open the "Search…" tool (Ctrl + F)

In the "Type" field, select "From Element" (cf page 14)

Then click on any hatching.

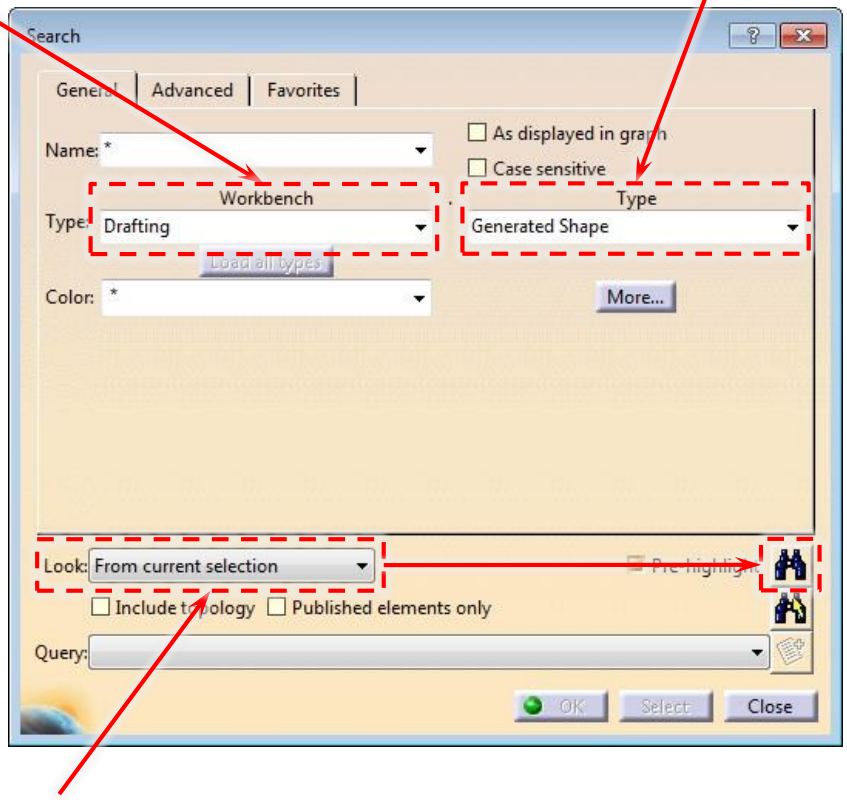
2 - How to select non hatched zones





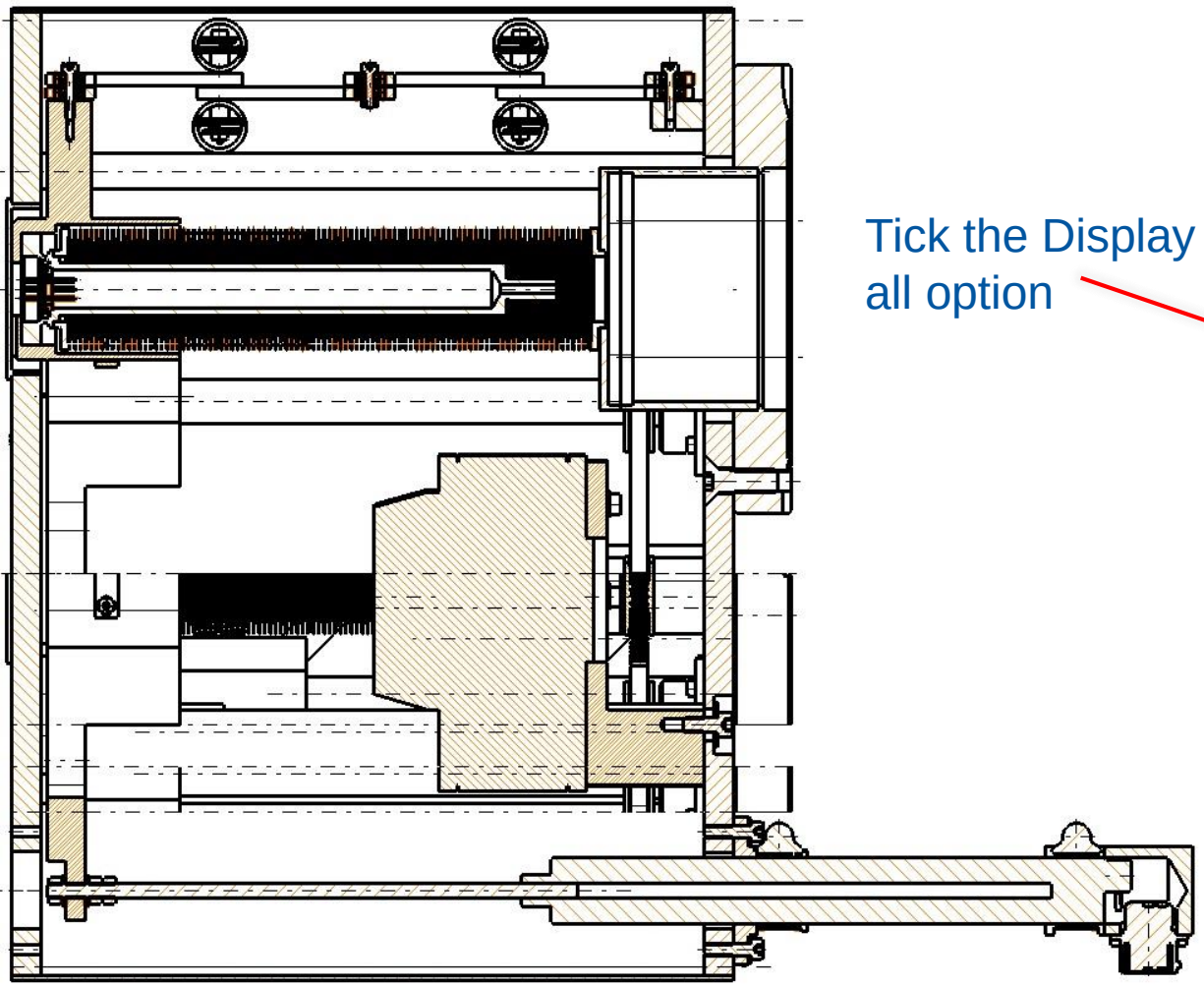
2 - How to select non hatched zones

Once the hatching has been selected, the "Workbench" field will be automatically filled with "Drafting" and the "Type" field with "Generated Shape"

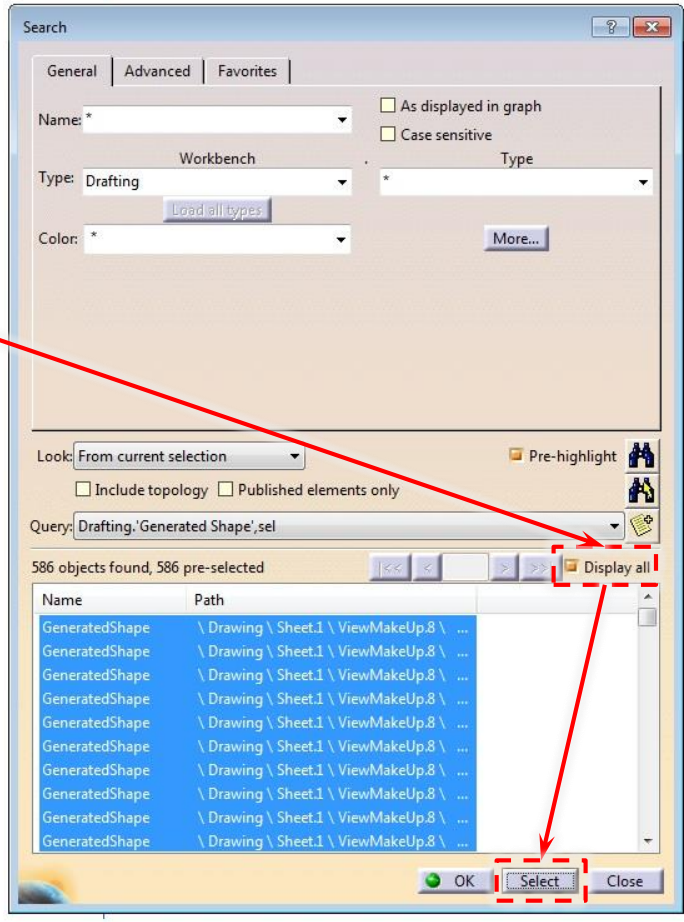


You can now specify that the search is to be performed only in the previously selected view by modifying the "Look" field value to "From current selection". Then click on Search (googles icon)

2 - How to select non hatched zones



Tick the Display all option



All the hatchings are now selected on the view. Click on "Hide/Show" 

to send them in the non visible space

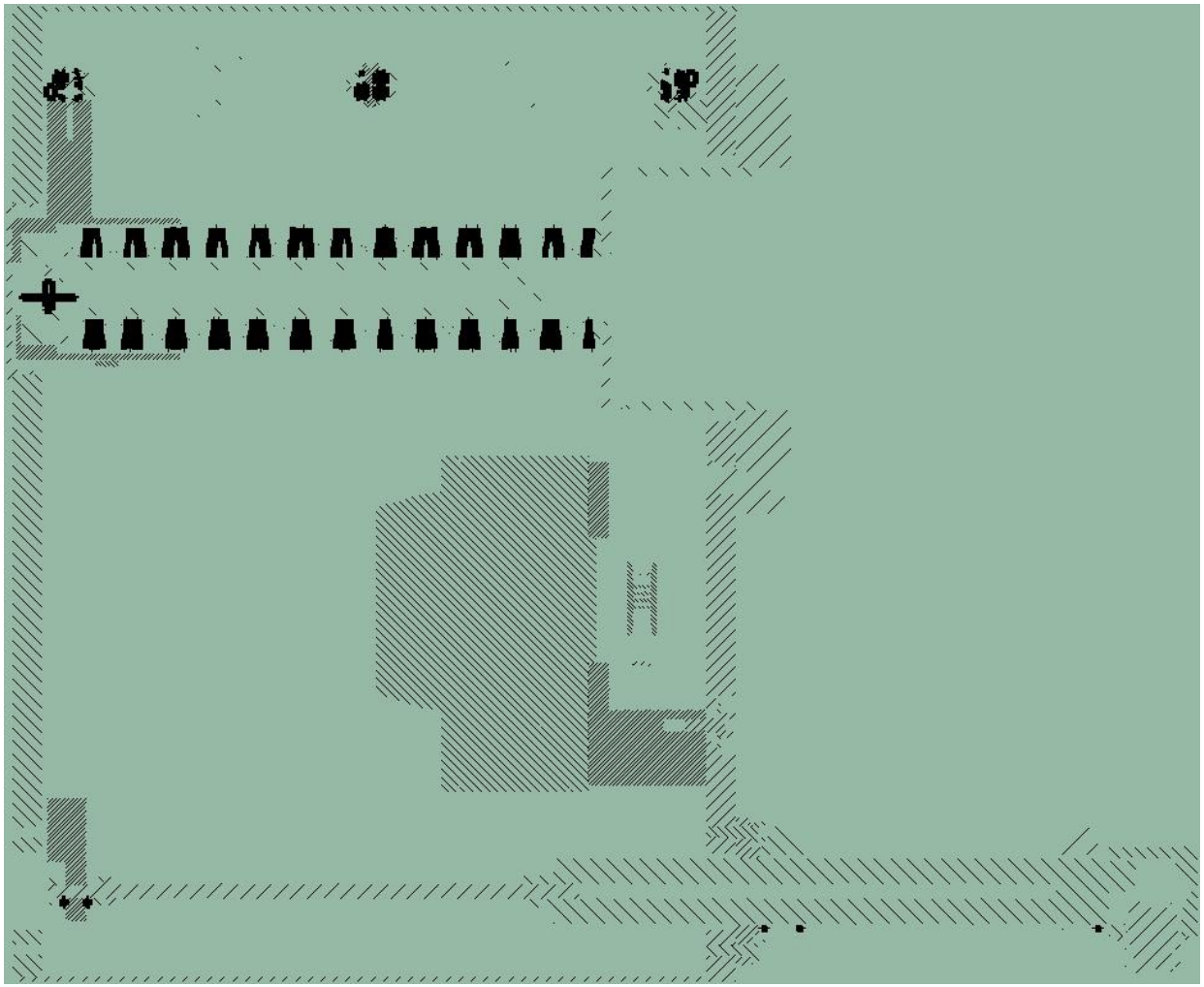
2 - How to select non hatched zones

Now click on "Swap Visible Space" 

. You can easily identify the non hatched zones.

Double click on each of them to modify their pattern properties (cf page 12).

To finish select all these hatchings through a selection trap (or via the very same search method) and do a "Hide/Show" to send them back to the visible mode.



3 - How to hatch identically repeated references

Here is a technic to perform identical hatchings on a CATPart reference repeated a lot of time in an assembly (i.e. magnet yokes, …).

To do so, we will have to proceed by steps as follows :

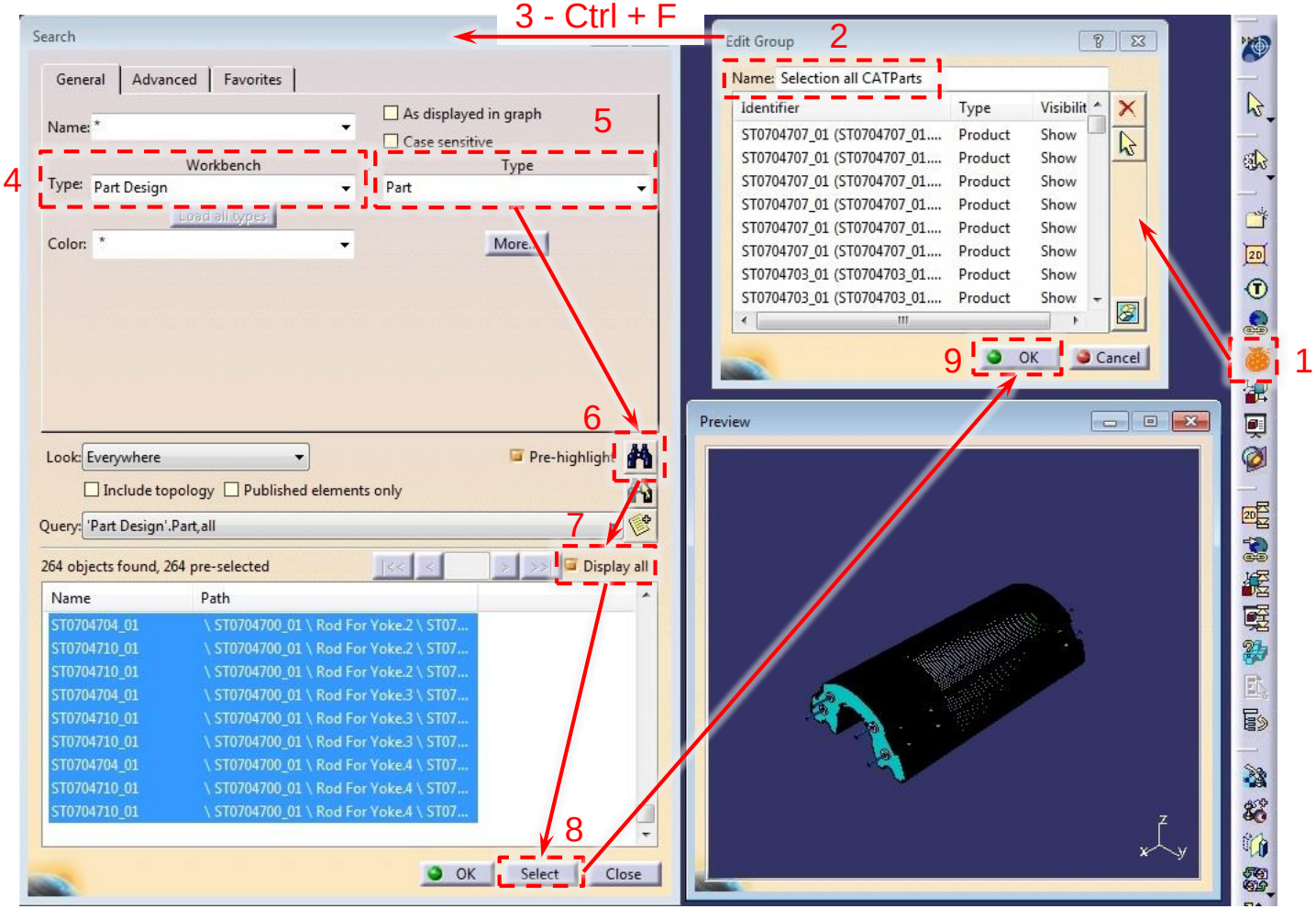
- Step 1 – Assembly modifications
- Step 2 – Drawing modifications

This trick allows you to harmonize the hatchings of multiple used elements easily and quickly.

3 - How to hatch identically repeated references

Step 1 – Assembly modifications :

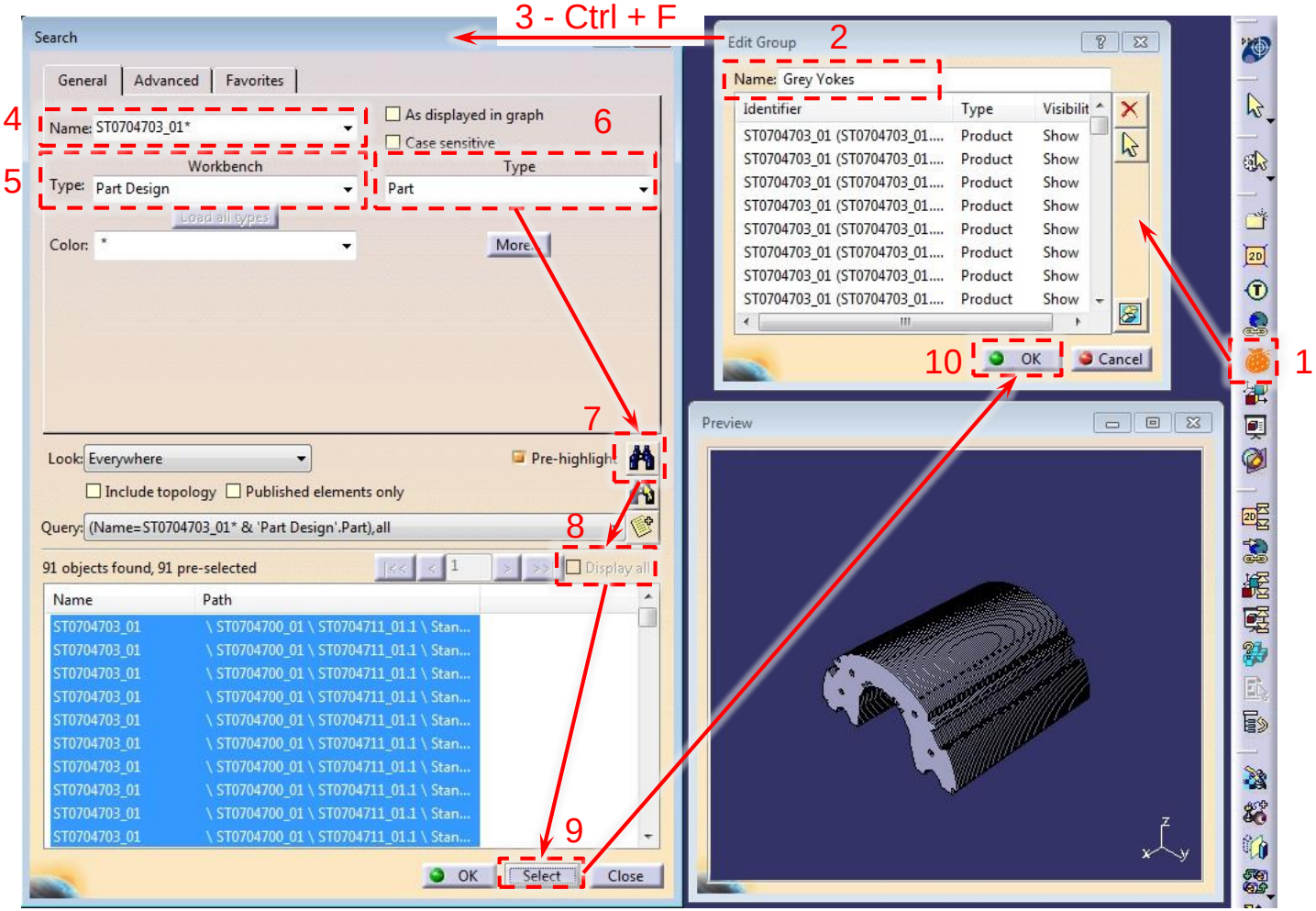
Create a new group containing all the CATParts constituting the product.



3 - How to hatch identically repeated references

Step 1 – Assembly modifications :

Create 1 new group / identical CATParts.

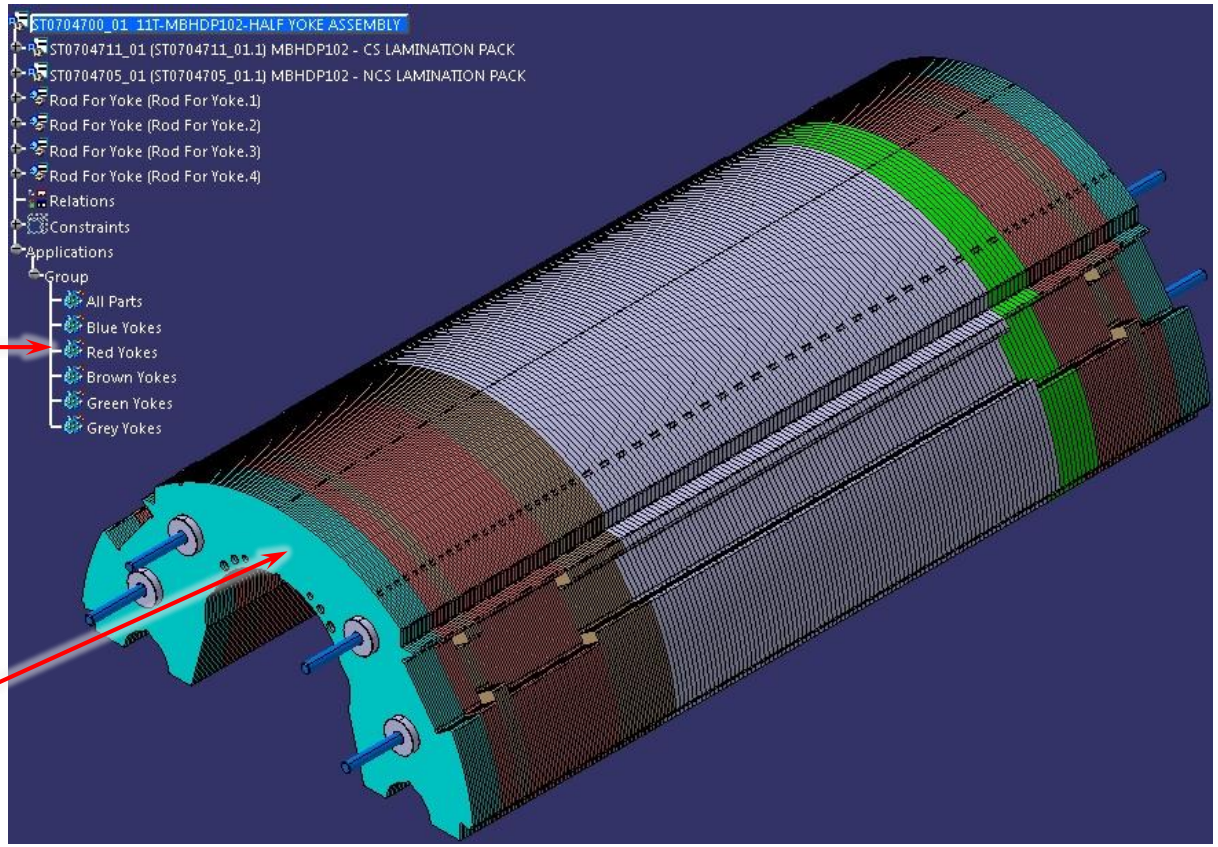


3 - How to hatch identically repeated references

Step 1 – Assembly modifications :

Once done, save the assembly to keep the modifications.

Tip: Rename the groups so they can be identified easily



Colors are also interesting to check the search string is correct!

Step 2 – Drawing modifications :

This trick can be used while creating a brand new drawing but **it can also be applied on an already existing drawing without any impact on the already existing views**.

To avoid impacting the existing views, **copy the most relevant (even several) section view and paste it on your drawing**. **All the following actions will have to be performed on this view** if you want to avoid harmful impacts on the existing views.

You can also create a brand new section identical to an existing one (but it can be significantly longer if the product is heavy…)

3 - How to hatch identically repeated references

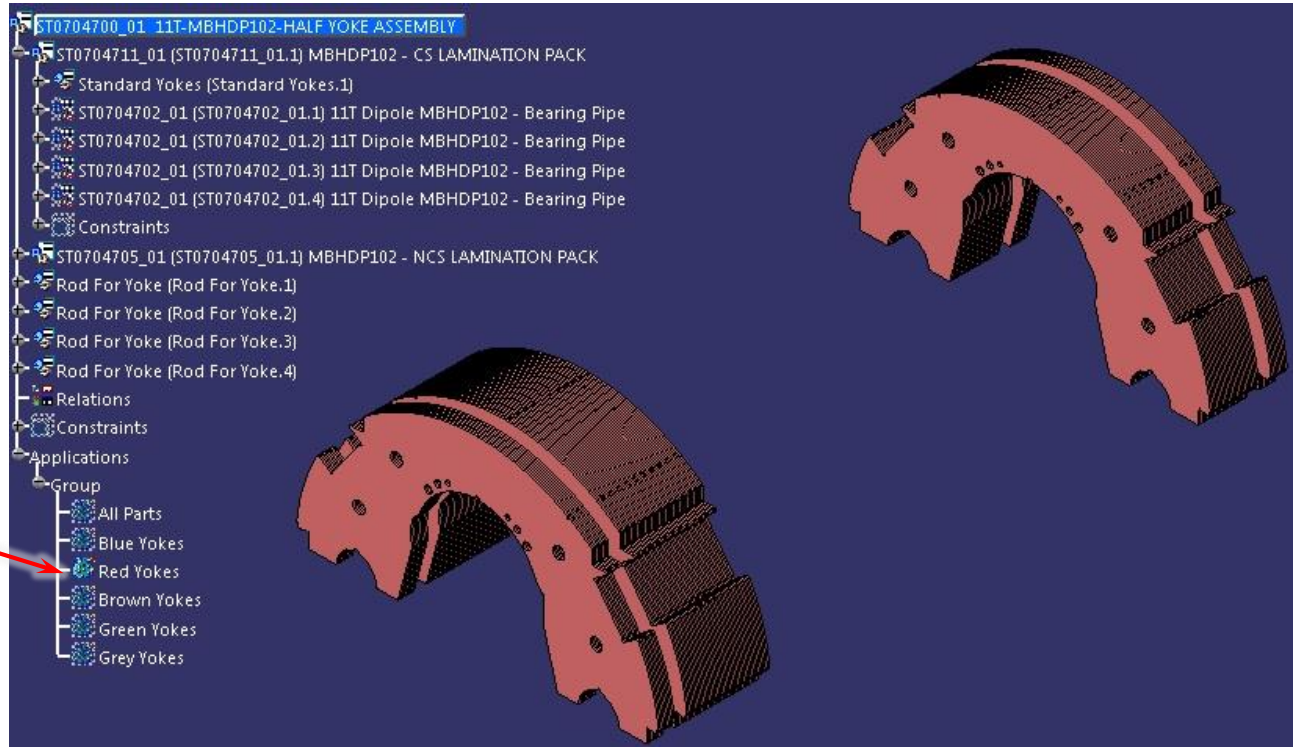
Step 2 – Drawing modifications :

1 – Copy the section view and paste it on the drawing. (Ctrl+C / Ctrl+V)

2 – Switch to the assembly window.

3 – Hide all the groups and show only 1 group to be modified:

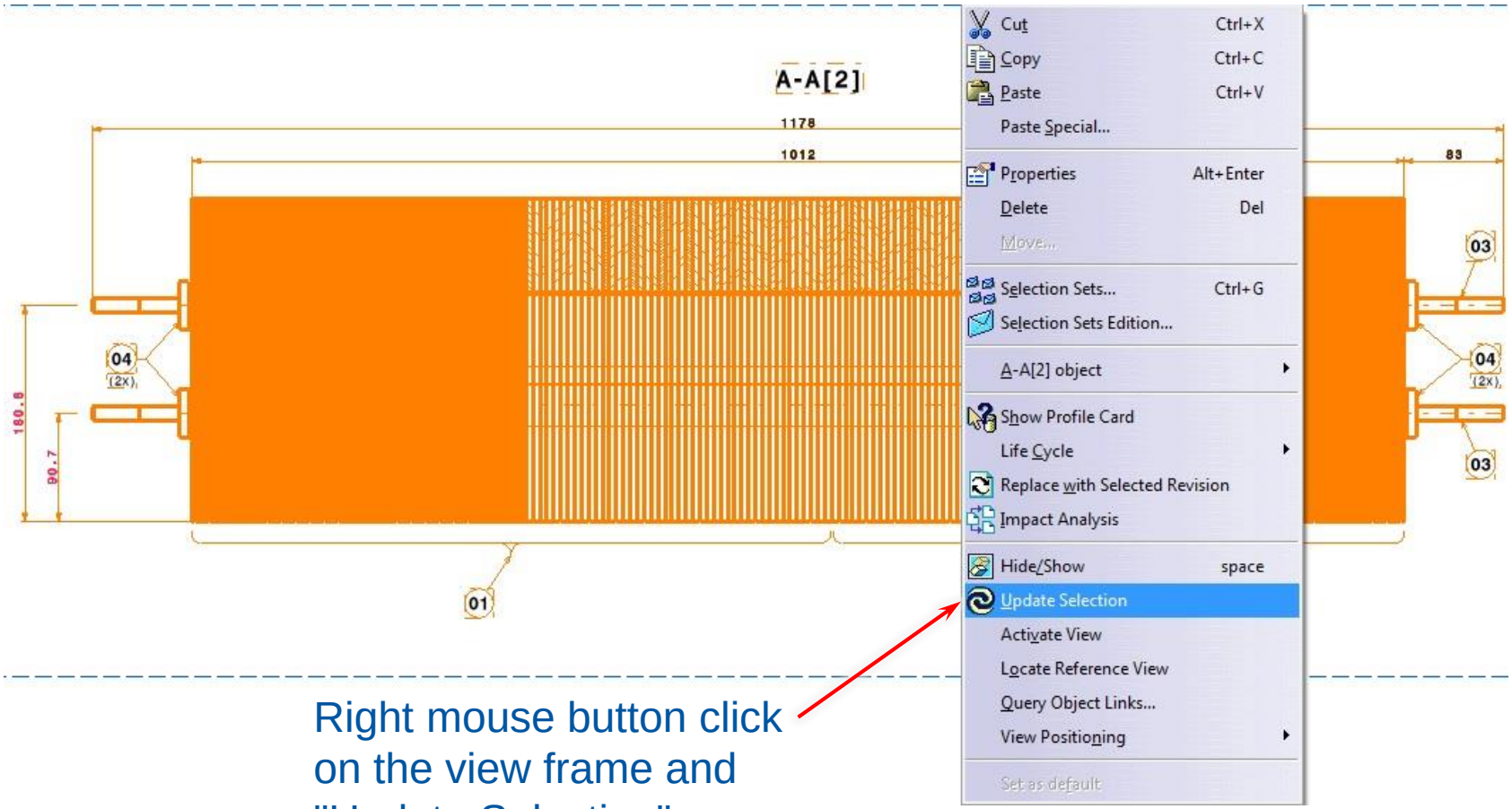
"Red Yokes" group left visible only



3 - How to hatch identically repeated references

Step 2 – Drawing modifications :

4 – Proceed to a **local update of the new section view only**.



Right mouse button click on the view frame and "Update Selection"

3 - How to hatch identically repeated references

Step 2 – Drawing modifications :

5 – Proceed to Search and Select of all the hatchings of the view as described on the pages 13 to 16 (don't forget to select the view prior to launch the search).

6 – Once the hatchings are selected, do a right mouse button click on a hatching and go to properties, then modify the Pattern properties as described on page 12. Your pattern modification is propagated to all these parts in all the section views of the drawing.

7 – Repeat operations 3 to 6 for the other groups and you're done with your modifications.

8 – You can now delete the view you've created.

9 – Save the drawing without any additional update and close it.

10 – Reopen the drawing and check if an update is needed or not.

SPECIAL THANKS!!!

Thanks to all of you for your attention.

I would like to warmly thank M. **Benoît Lepoittevin** for the great support he has provided me while elaborating this methodology.