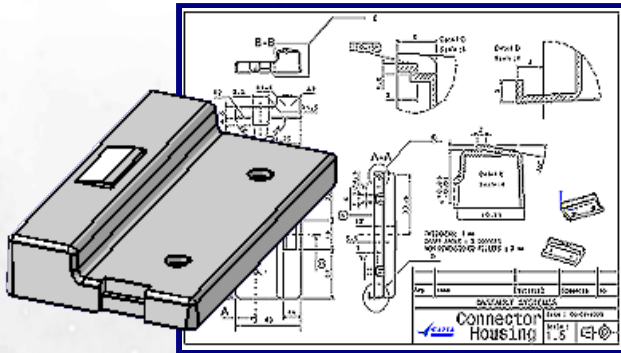


CATIA Training Exercises



Generative Drafting (ISO)

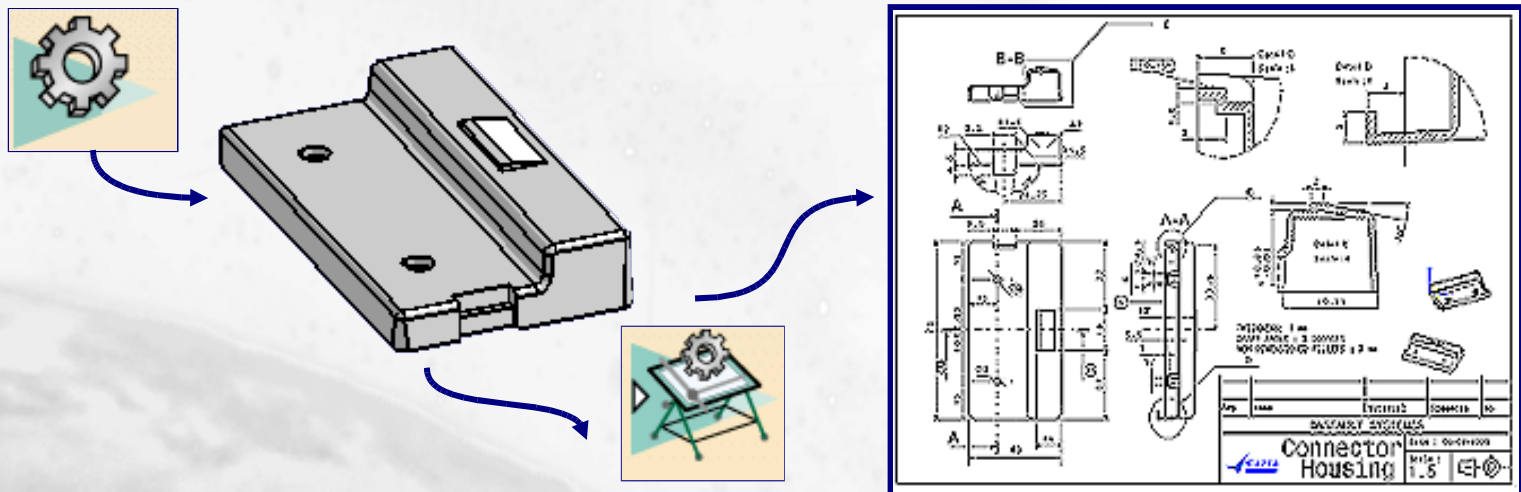
Version 5 Release 8
January 2002

EDU-CAT-E-GDRI-FX-V5R8

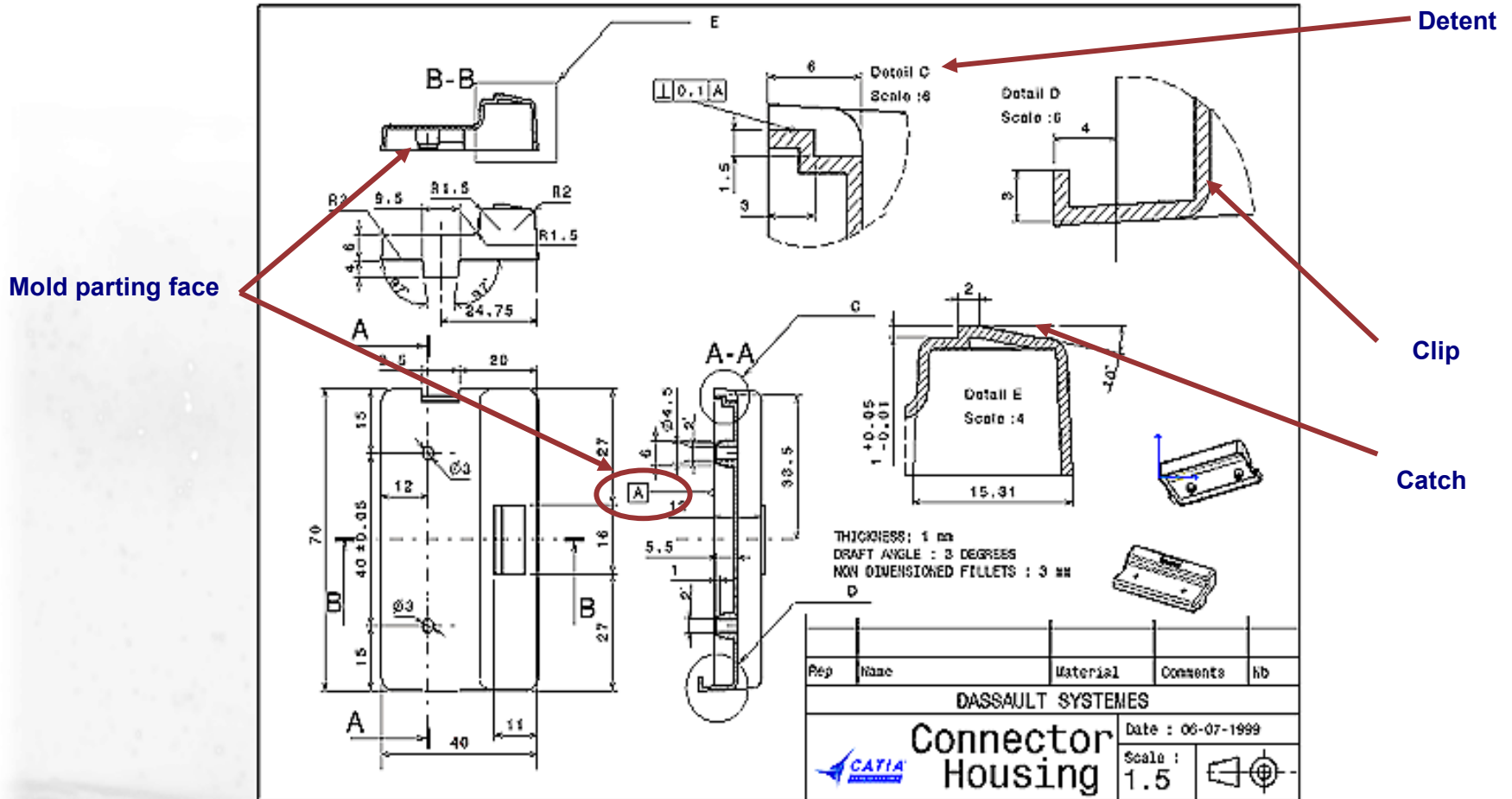
Exercise

Connector Housing : Presentation

In this exercise you will learn Generative Drafting fundamental concepts by generating the drawing of the connector housing from the 3D Part. This process includes the creation or generation of all necessary views, dimensions and Annotations. You will also see the associativity of the 3D part to the drawing when the connector housing is modified.

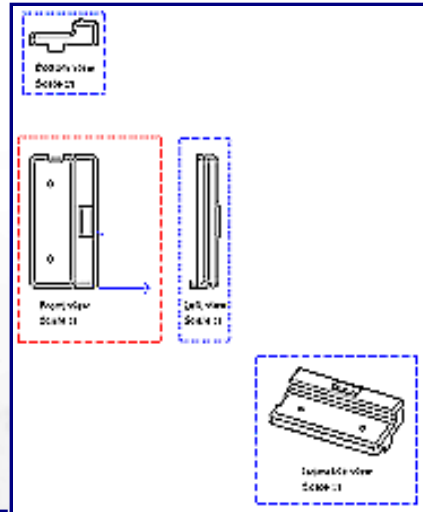


Connector Housing : Design Intent

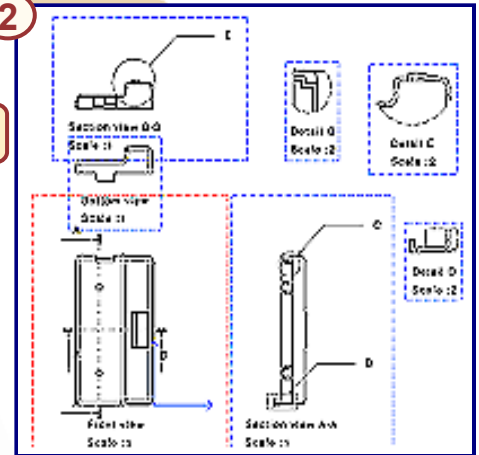


- ◆ Define Datum A for the mold's splitting or parting element.
- ◆ Generating dimensions for the general shape of the part; referencing the parting face as much as possible.
- ◆ Manual dimensioning of all additional geometry such as catch, detent and clip.
- ◆ Define tolerances in relation to the part's functional constraints.

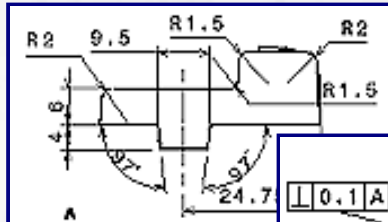
Starting the drawing and creating the views



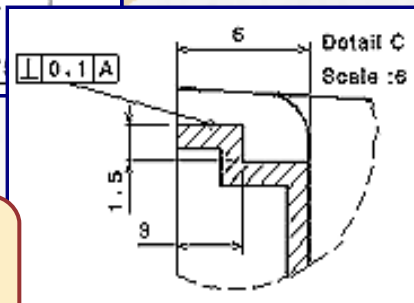
2



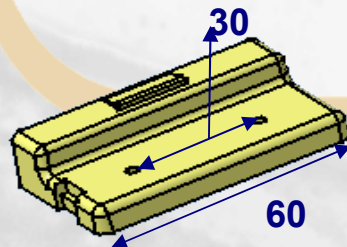
3



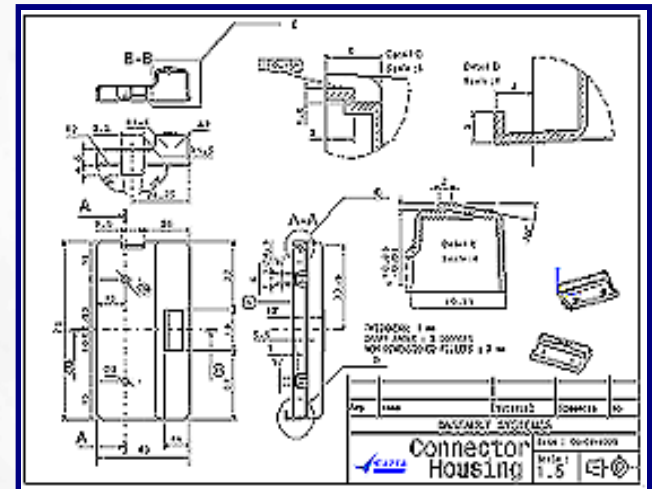
Dimensioning, tolerancing & Annotating and dressing up



Checking for changes and Printing

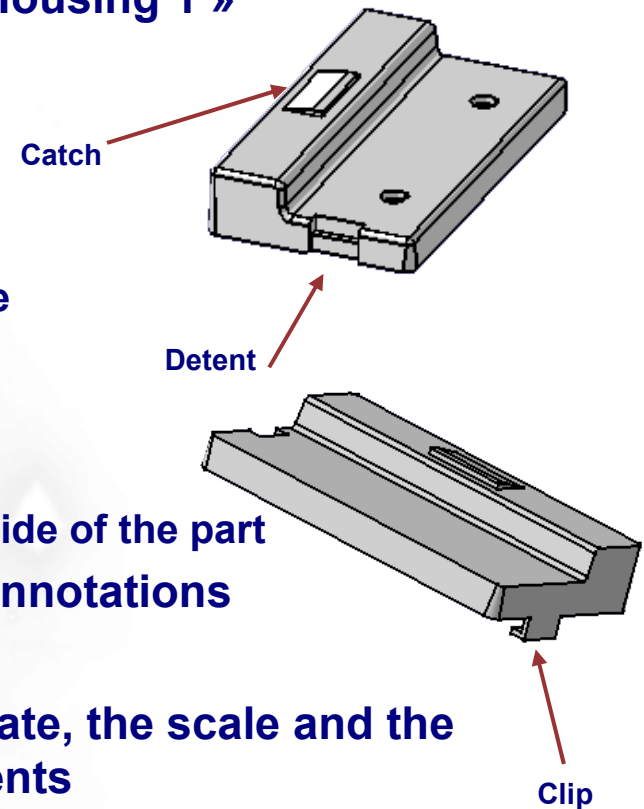


3D Part Design Changes



Connector Housing : Givens

- Start from the 3D solid part called « Connector Housing 1 »
- Generate the following views:
 - ◆ Front View
 - ◆ Bottom View
 - ◆ Section View passing through the holes
 - ◆ Section View passing through the Catch mid plane
 - ◆ A Detail View of the Catch
 - ◆ A Detail View of the Clip
 - ◆ A Detail View of the Detent
 - ◆ 2 isometric views showing the outside and the inside of the part
- Add all necessary dimensions and associative annotations
- Add all necessary annotations
- Add a title block with the name of the part, the date, the scale and the standard used plus fields for Names and Comments

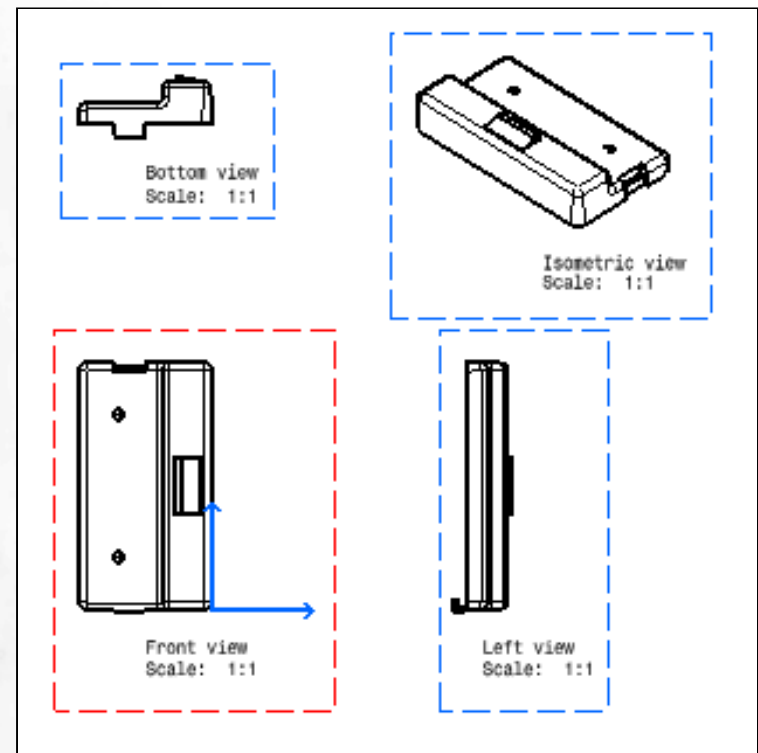
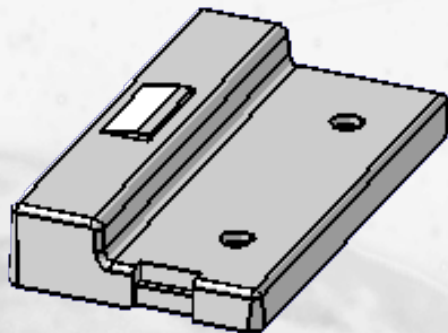


Exercise

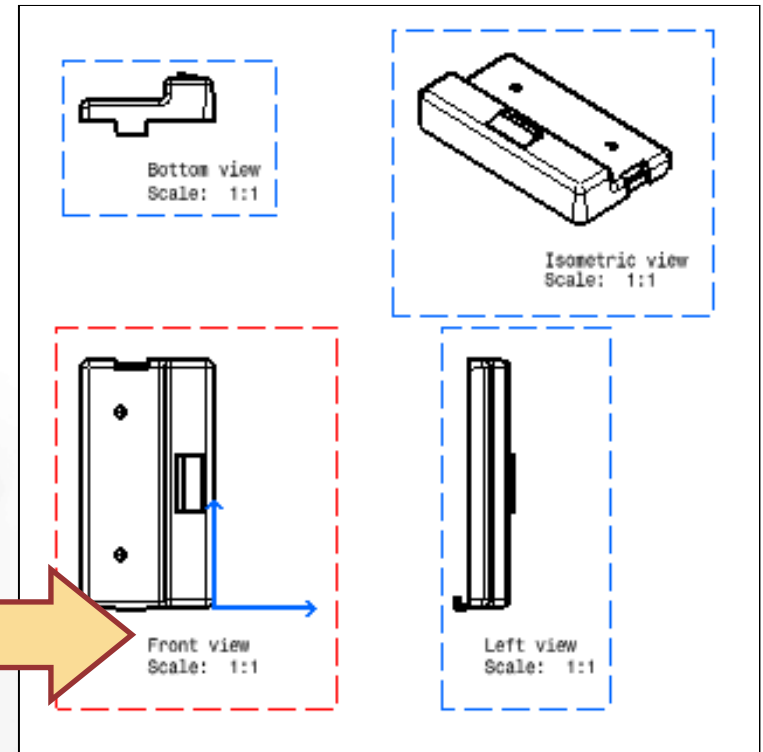
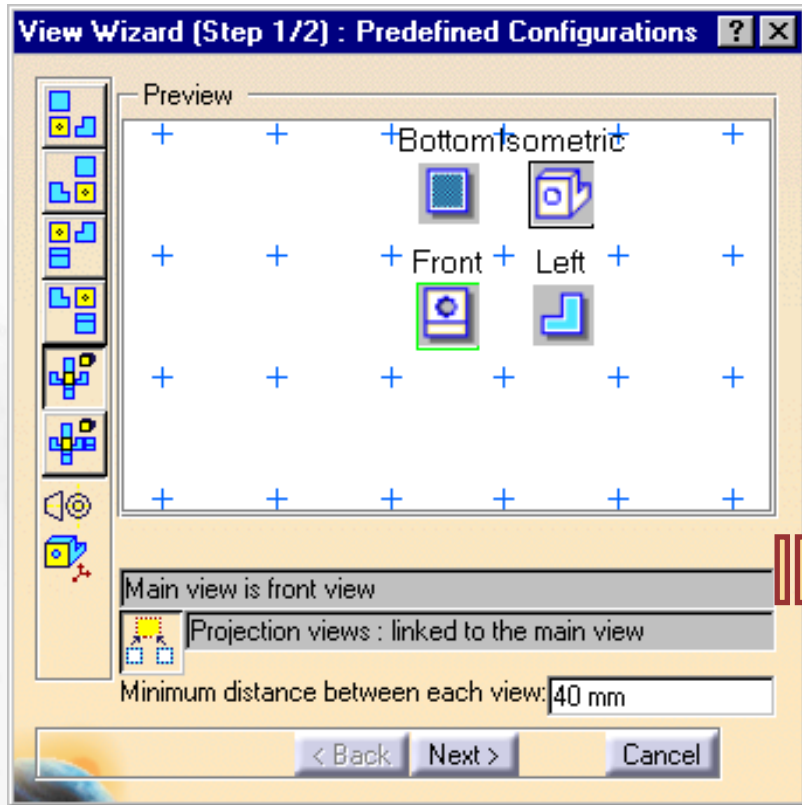
Step 1 : Views Generation



In this step you will quickly Generate 3 main views and an isometric view of the connector housing. You will then check drawing default options.



Do it Yourself

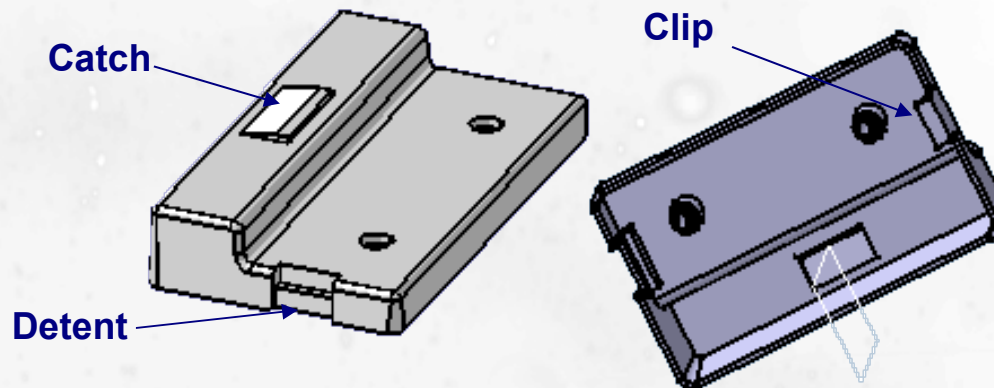


 **Load: CATGDICConnectorHousing1.CATPart**

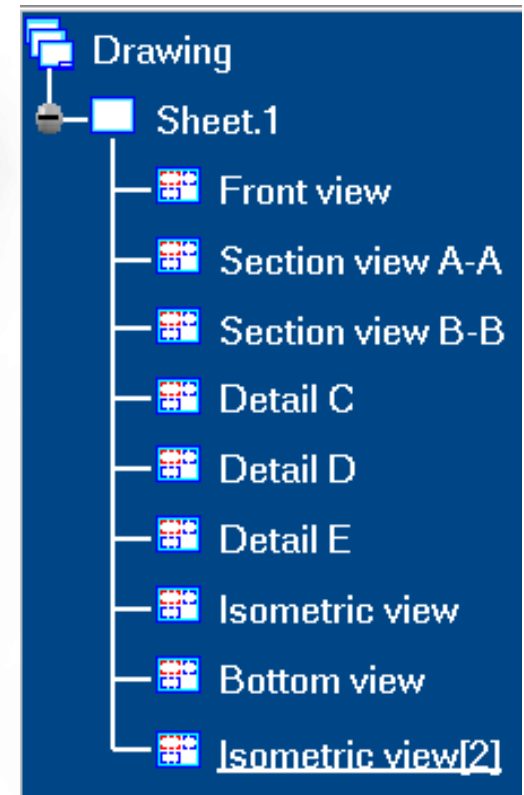
1. While the Connector Housing 1 part is in the Part Design workbench, go to the Drafting workbench
2. Set the ISO standard and A2 ISO sheet format
3. Set the sheet properties to third angle projection standard
4. Generate the Front, Top and Right views plus an isometric view
5. Set the default fillet representation to off for later views
6. Save the drawing with its link to the 3D part "Connector Housing 1".

Exercise

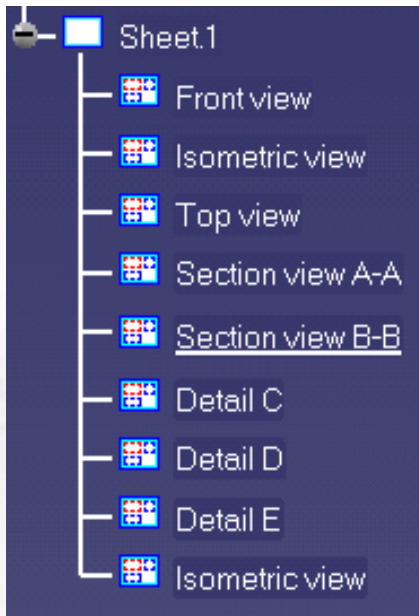
Step 2 : Additional Views



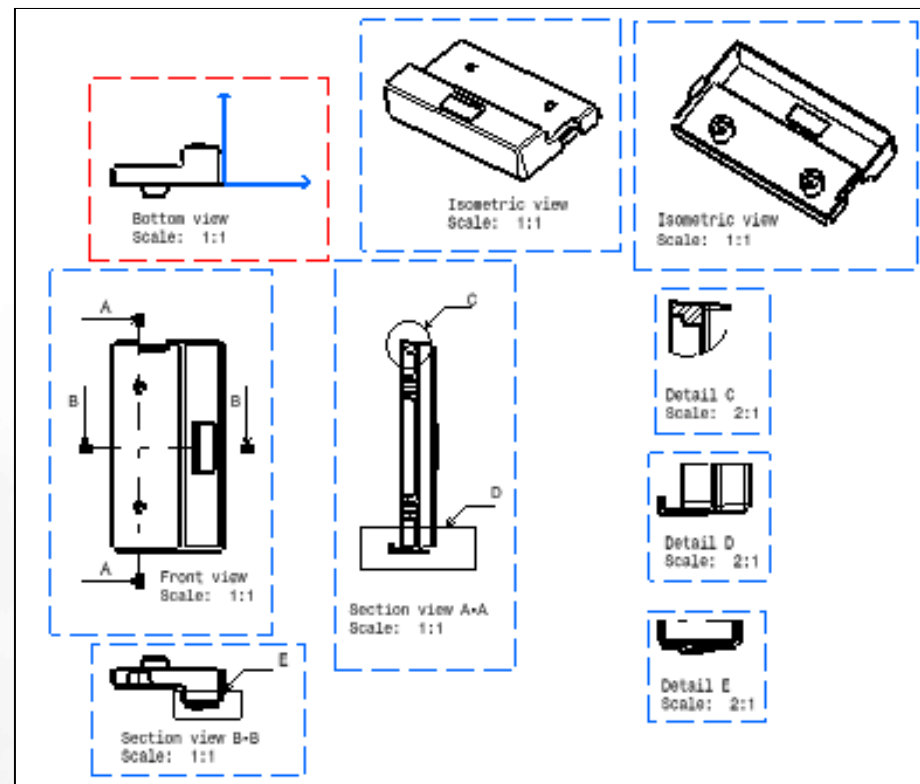
In this step you will add two section views and three detail views.
You will also an extra isometric view.
Do not dimension any views yet.



Do it Yourself



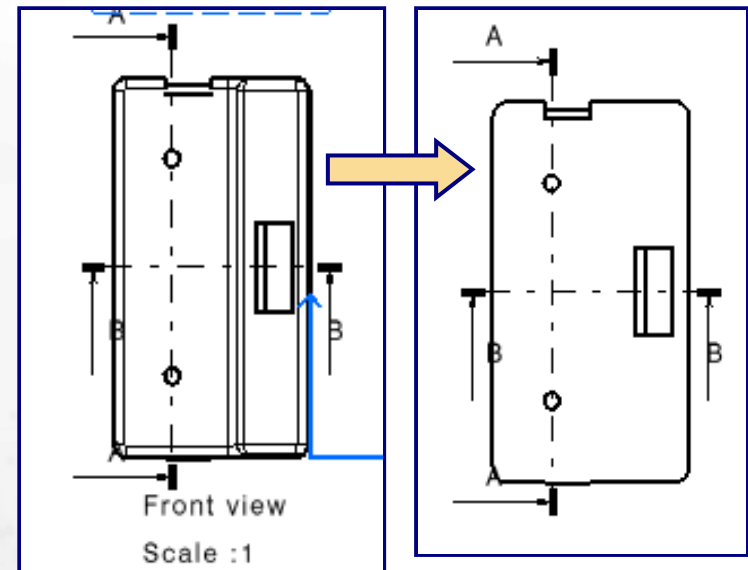
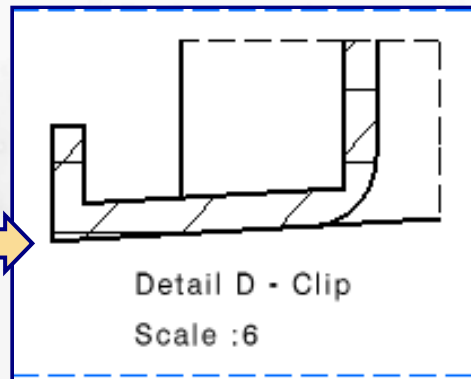
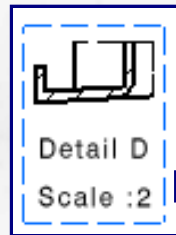
Load:
CATGDICconnector_2iso.CATDrawing



1. Delete the left view and replace it with a section view A-A passing through the middle of the two threaded holes and located on the right of the front view.
2. From the mid plane of the Catch, generate a section view B-B and position it under the Front view.
3. From section A-A, make a detail view around the Detent with default scale of 2.
4. From section A-A, make a detail view around the Clip with default scale of 2.
5. From section B-B, make a detail view around the Catch with a rectangle callout and with default scale of 2.
6. Add an isometric view showing the inside of the connector housing.

Exercise

Step 3 : Properties



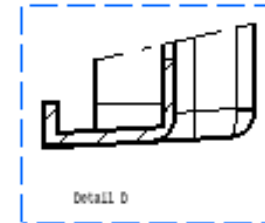
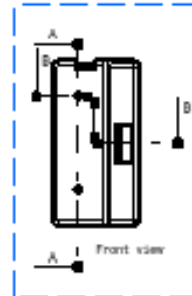
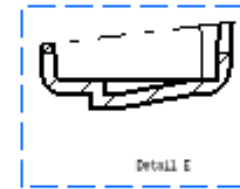
In this step you will change the view properties of the name, scale, fillet representation and hidden line visualization. You will modify a detail view callout and redefine a section view profile. You will also change the position of a view and the hatching representation.

Do not dimension any views yet.

Do it Yourself



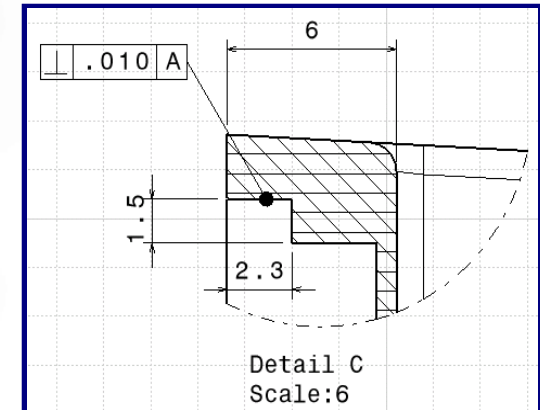
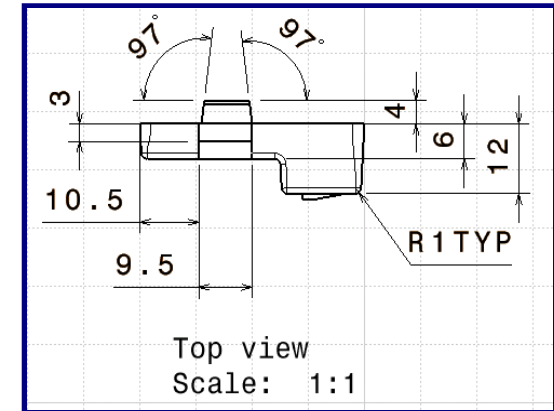
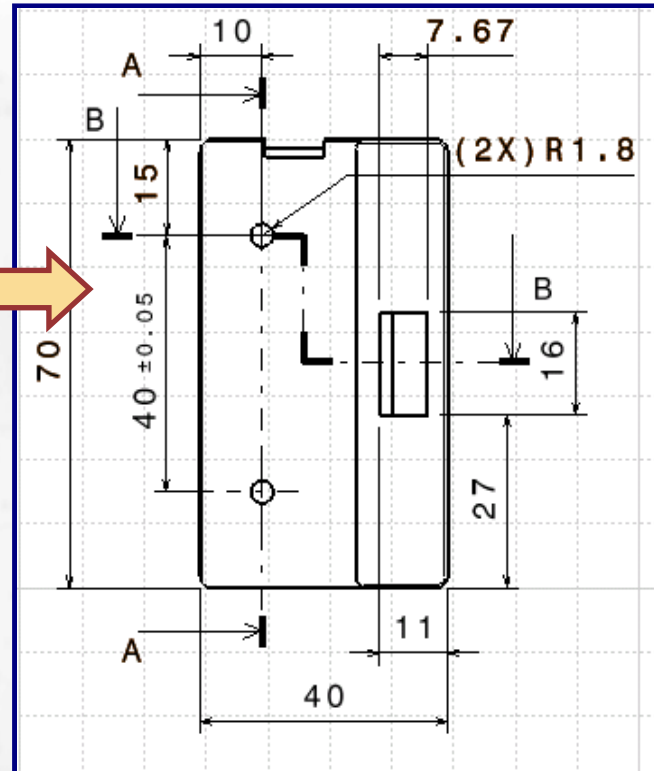
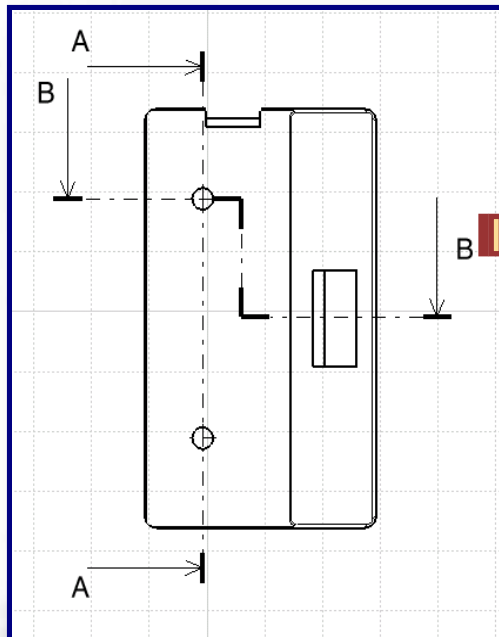
Load: CATGDICconnector_3iso.CATDrawing



1. Delete name and scale on front view and bottom view and change section views name to A-A and B-B
2. Change scale of all detail views to 6 and change scale of isometric views to .5
3. Modify section B-B so that it passes through the catch and one of the through holes
4. Change the detail “E” callout such that the “E” is located between the breaks of the circle
5. Remove all unnecessary hidden lines in the Front View
6. Put a plastic hatching on all sections
7. Rearrange all views on the sheet as shown above

Exercise

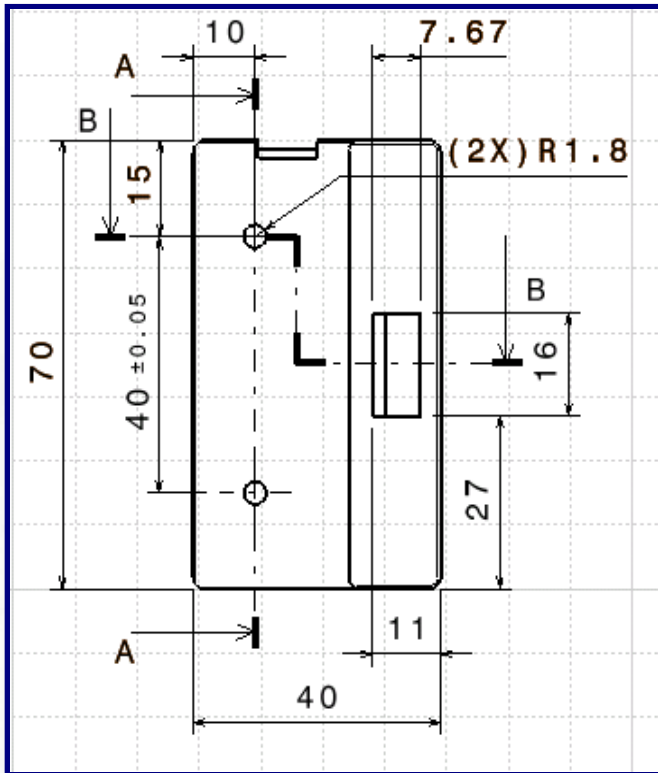
Step 4 : Dimensioning & Tolerancing



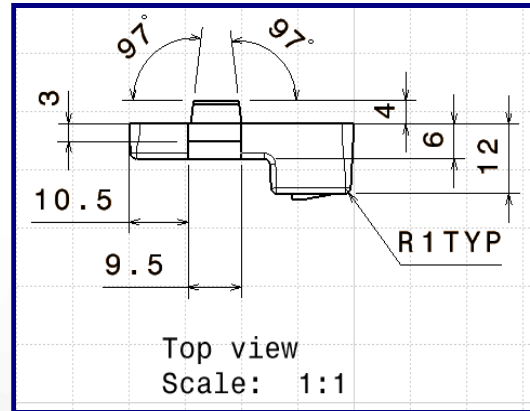
In this step you will dimension two parts with the automatic and manual methods. You will also add a datum and a Geometric toleranc

Do it Yourself

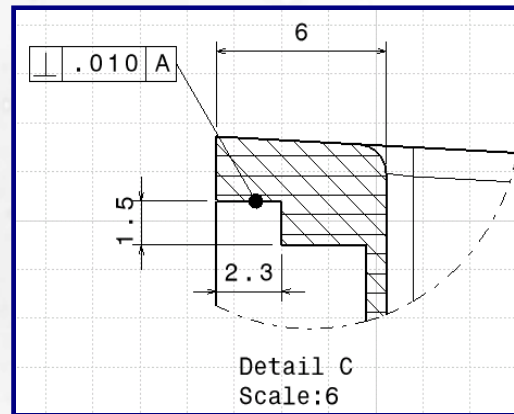
Front view



Top view

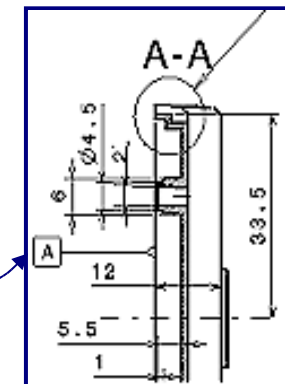


Detail C



datum

Section A-A



Load: CATGDConnector_4iso.CATDrawing

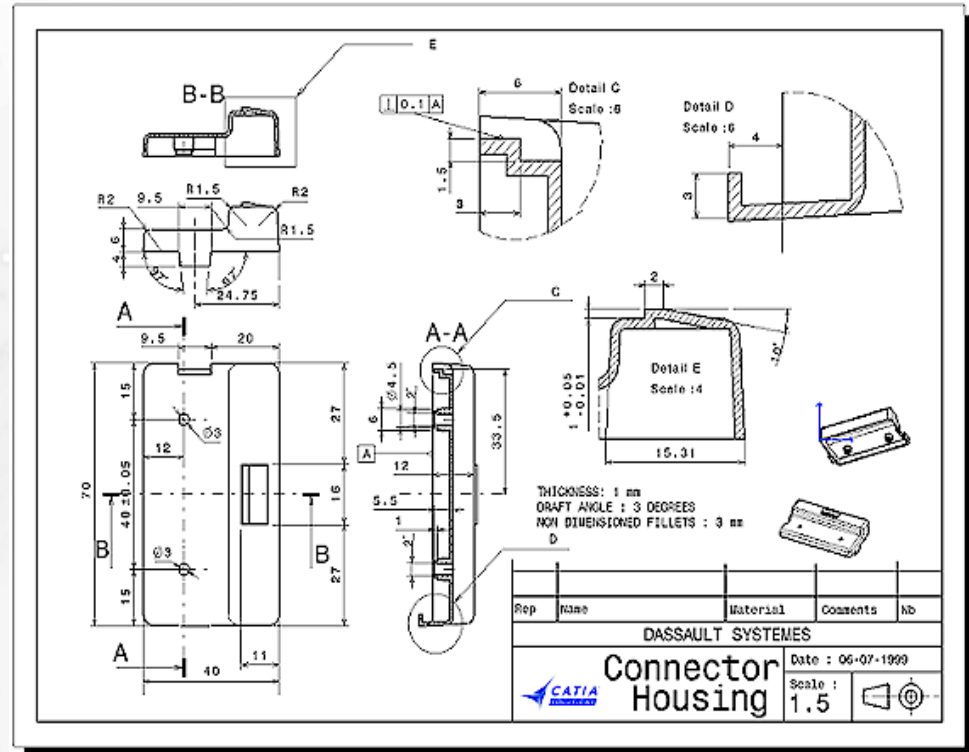
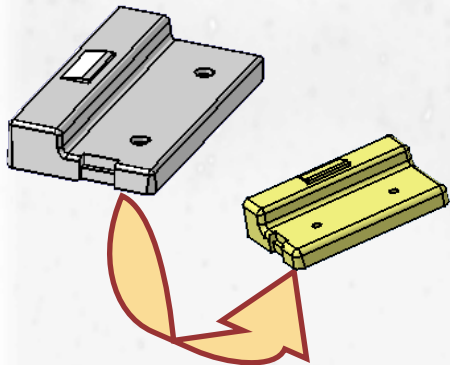
1. Generate the 3D constraints in step by step, reposition, transfer and discard appropriate dimensions
2. Manually dimension the front and top views as shown above
3. Add datum A on section A-A and Geometric tolerances on Detail C as shown above

Exercise

Step 5 : Finalizing the Drawing



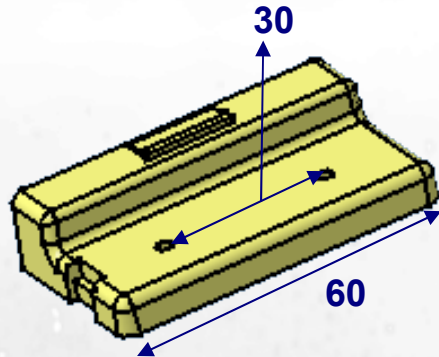
30 min



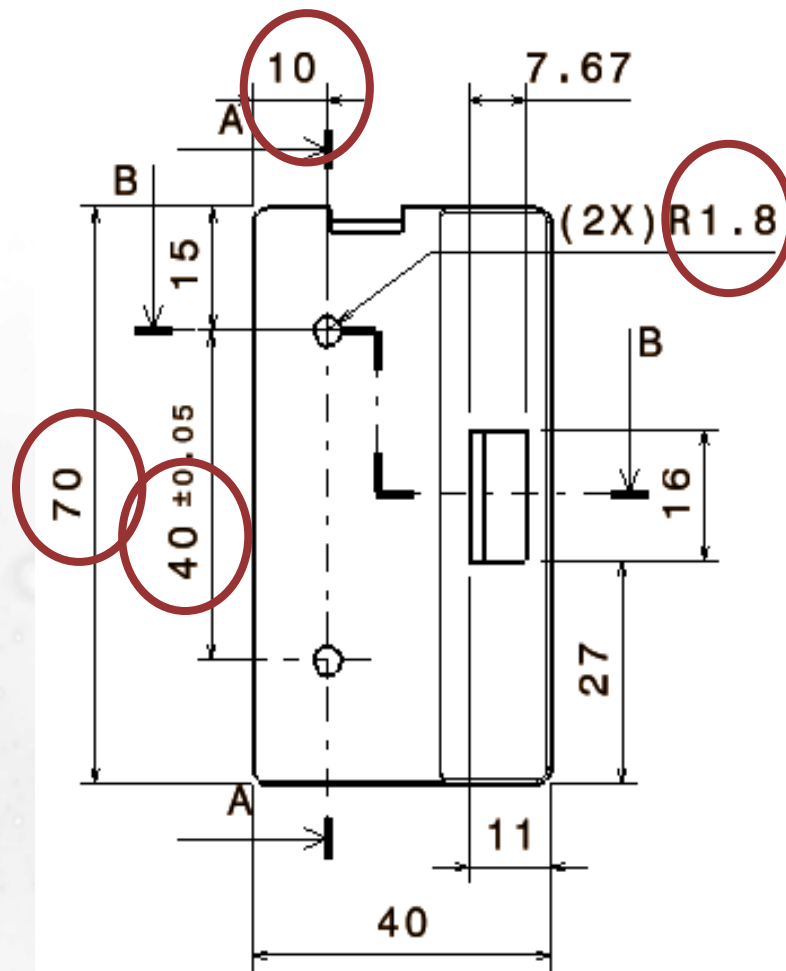
In this step change the specifications in 3D and make the drawing up to date with the 3D part's new dimensions.

Draw a title block and store it, and Print the drawing on a simple office printer

Do it Yourself (1/2)





Load: CATGDIConnector_5iso.CATDrawing



1. Open the source document and change to the Part Design Workbench. Change the length of the connector housing to 60mm, the distance between the hole and the edge to 12mm, the distance between the 2 holes to 30mm and the diameter of the holes to 2mm.
2. While the drawing is open, save the Part under the name Connector Housing 2.
3. Update the drawing and check that the dimensions are correct on the Front View

Do it Yourself (2/2)

Rep	Name	Material	Comments	Nb
DASSAULT SYSTEMES				
 Connector Housing		Date : 06-07-1999		
		Scale : 1.5		

THICKNESS: 1 mm
DRAFT ANGLE : 3 DEGREES
NON DIMENSIONED FILLETS : 3 mm

1. Use a macro to create the above Title Block in the background.
2. Add the above title block and general specification text
3. Remove all frames around views and print it on a A4 paper format