

Tip on the topic „General“ pattern

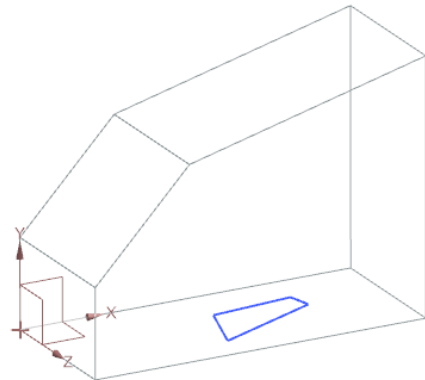
You want to insert a shape element within your active NX part associatively linked at different positions and orientations?



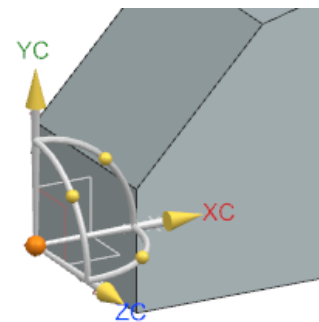
For this task, you will certainly think of the "General" layout in the "Pattern Feature" command.

In the following example I would like to show the handling by duplicating a sketch.

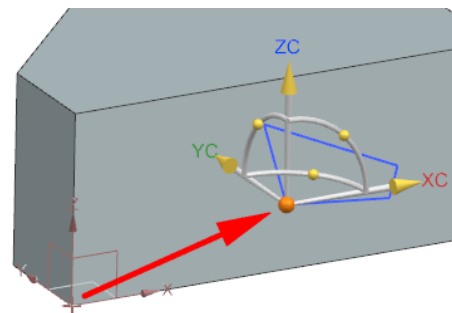
The starting point is this somewhat unusually inclined component in the picture on the right, on the bottom surface of which lies a completely determined sketch (see picture on the right).



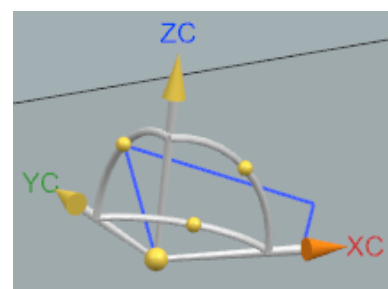
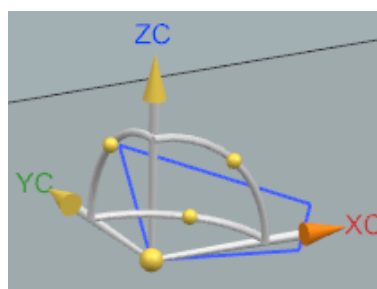
In the first step we create an axis system (**Datum CSYS** of type **Dynamic**) at a central point of the sketch, over which later the sketch copies can be well positioned. As reference we select "Absolute - Displayed part". NX displays the handle system at the absolute axis system ($X=0, Y=0, Z=0$) of the part (see picture on the right). We mark the origin point of the handle, which is displayed highlighted.



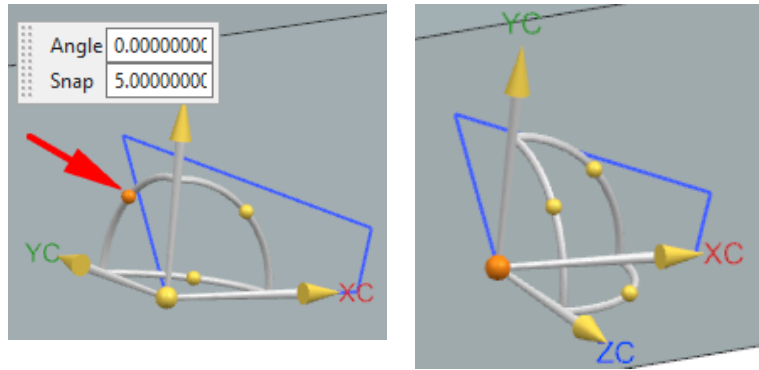
Now select the central point of the sketch where the axis system is to be located. The handle system jumps to the point marked on the sketch (see picture on the right).



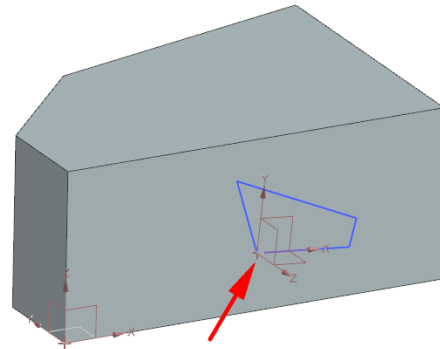
The **X-axis** is to be aligned with the lower oblique sketch line. To do this, we mark the arrowhead of the handle system and then the lower line of the sketch (see pictures on the right).



The Z-axis should be aligned normal to the sketch plane. For this we can select the handle ball at the YC-ZC plane and by entering 90 degrees in the input field rotate the axis system around the XC axis (see pictures on the right).



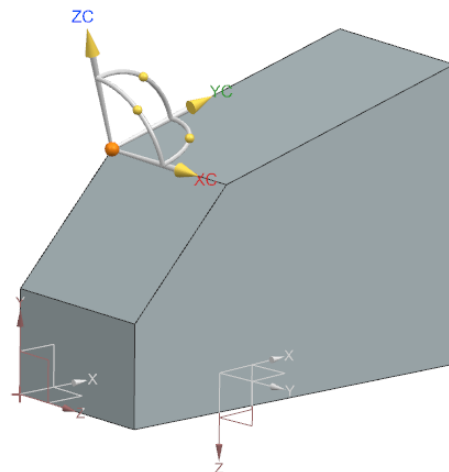
The new axis system should be independent of the reference system, i.e. "Associative" under the settings is not activated.



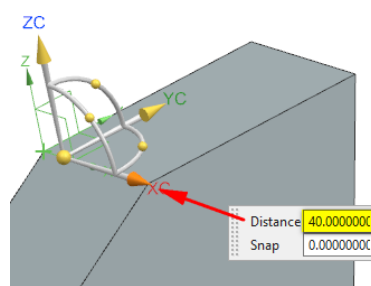
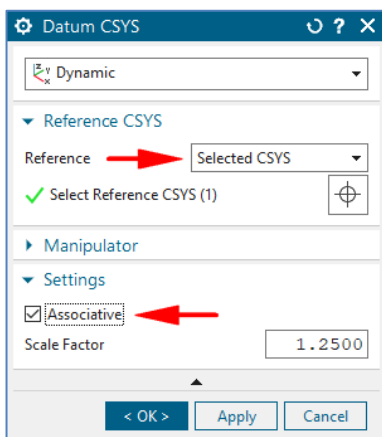
Now we can create the axis system with "OK".

Now we create further **non-associative** reference CSYS systems, e.g. the corner points of the surfaces (reference point) on which the copies are to be inserted (see picture on the right).

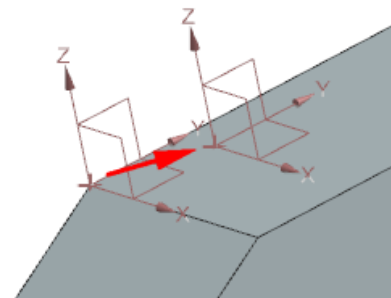
To align the axis systems, we use the same procedures shown previously (place axis origin, align axes, etc.). Axis directions can be reversed by double-clicking on the arrowhead of the handle.



In the next step we want to define an axis system **associative** to the reference axis system at the corner point at the insertion point of the sketch copy on this surface. By selecting the handle arrowhead, we can work with coordinate inputs and thus place another now **associative** axis system at the desired position.

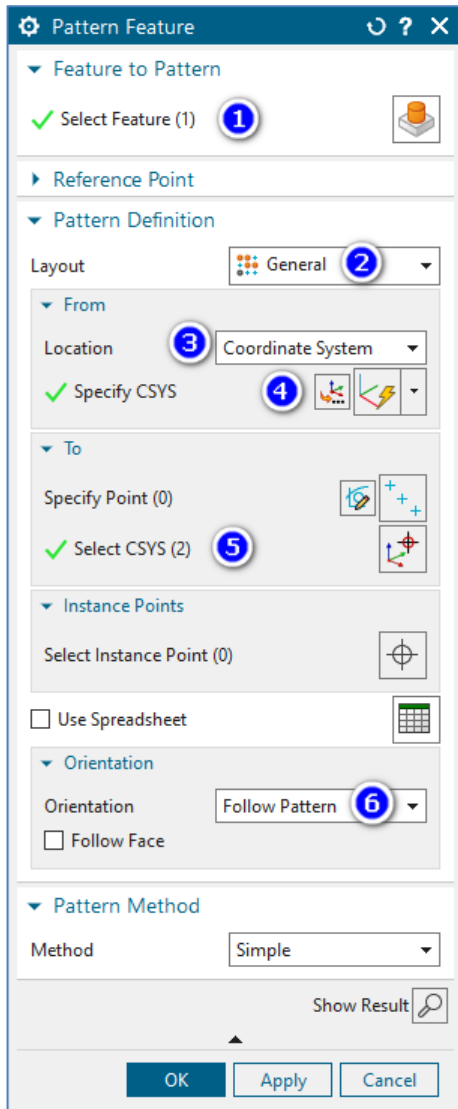


X=40

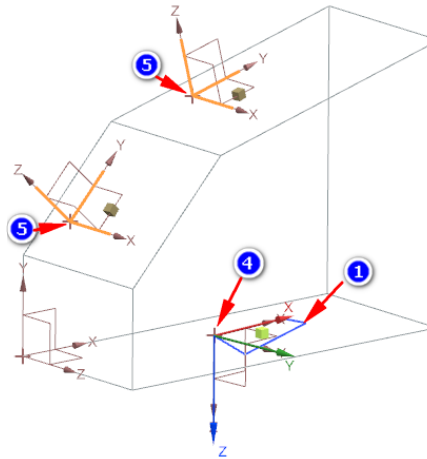


Y=100

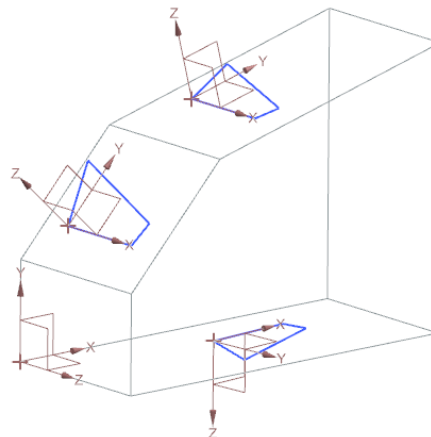
In this way, further axis systems for the planned Pattern Feature can be created on other body surfaces.



Now call the "**Pattern Feature**" function and generate the associative sketch copies.



The **associative sketch copies** are aligned with the CSYS systems and placed as desired.



I would be glad if this NX Smart Tip was useful for you.
Do you have any questions? Just contact me.



Your NX trainer, consultant and service provider

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