

The Most Dynamic Class on the Block – Creating Dynamic Blocks in AutoCAD

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Class summary

AutoCAD software's Dynamic Blocks gives you the ability to save time while reducing the size of your block library. Do you have multiple blocks with slight variations between them? Let's turn them into a single block that we can stretch, rotate, and more.

Key learning objectives

At the end of this class, you will be able to:

- Create Dynamic Blocks with the following abilities: stretch, mirror, array, rotate, align, multiple insertion points
- Limit block variations through lists and increments
- Apply constraints and parameters to control block behavior
- Implement Block Tables as well as the Lookup Action to quickly select the desired block iteration

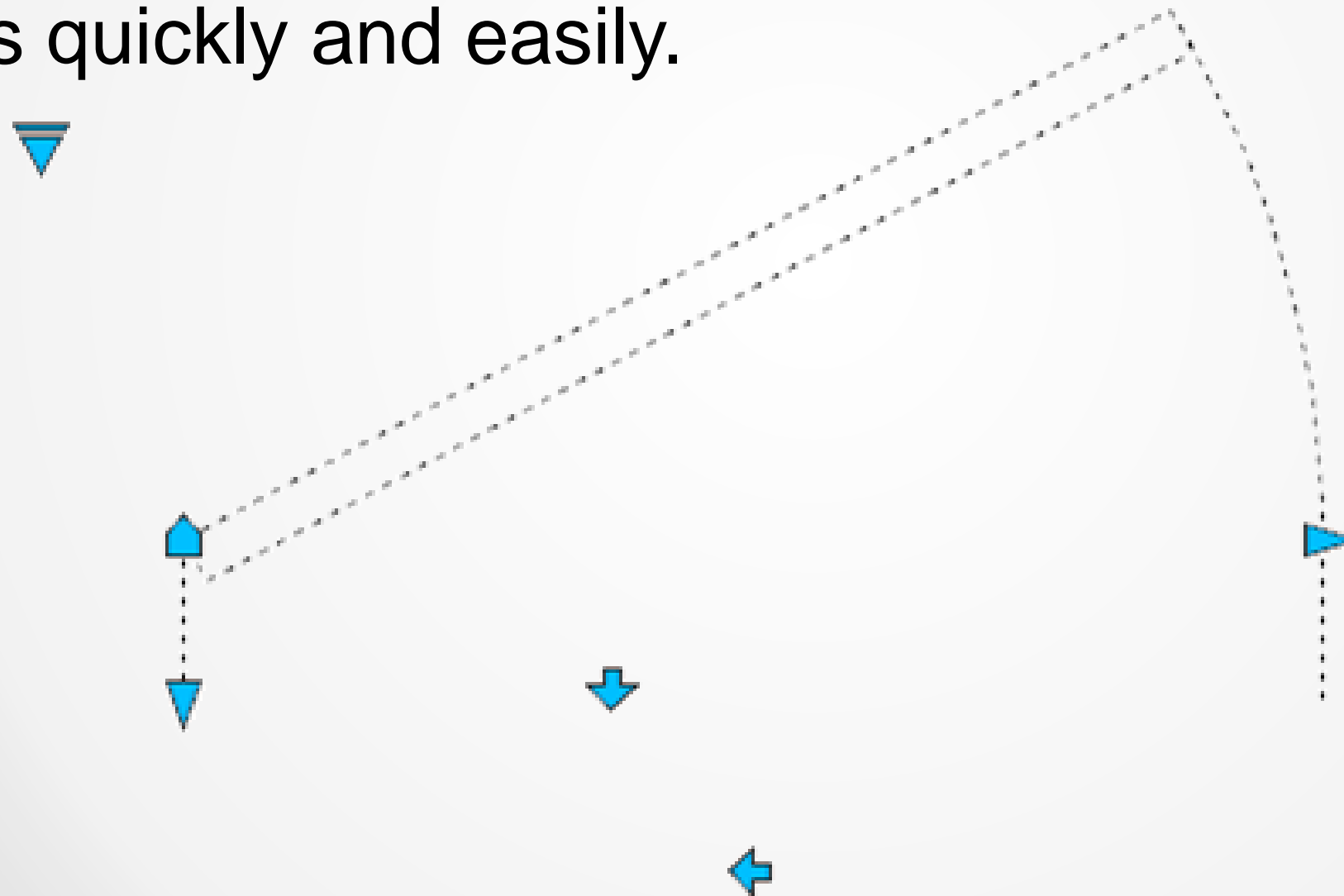
Who are you?

- I have already created Dynamic Blocks but I am looking for some tips and tricks.
- I have never created a Dynamic Block before and I am here to learn how to create my first Dynamic Block!
- The class I really wanted was full.

Why Dynamic Blocks?

Simplify your block library.

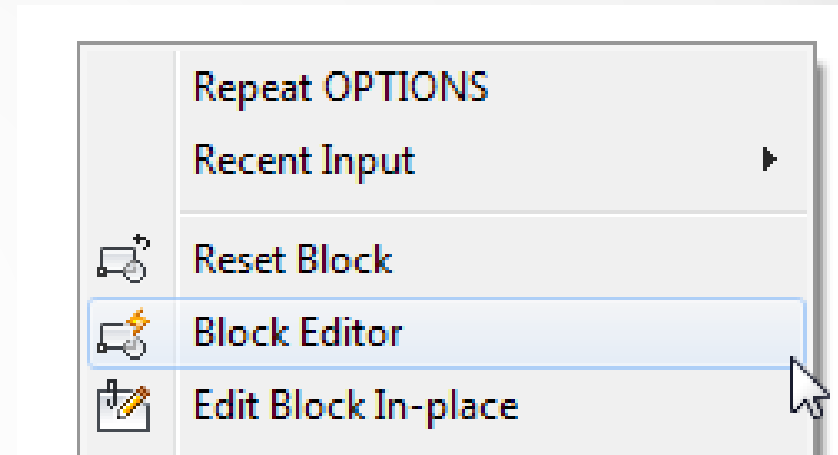
Modify blocks quickly and easily.



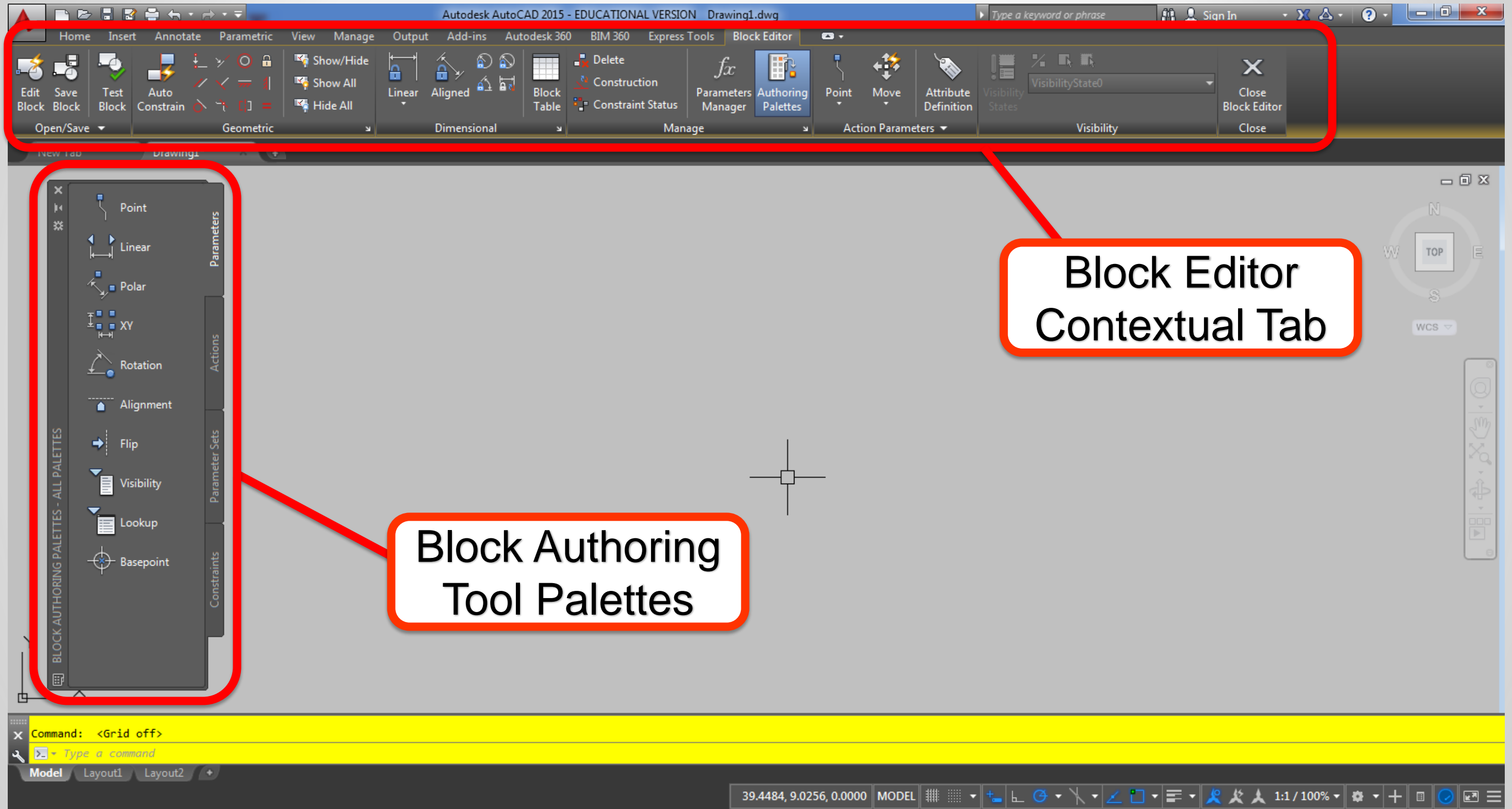


Block Creation Environment

- Double-click on a block (with exceptions...)
- Select the block and right-click
- Home > Block > Edit



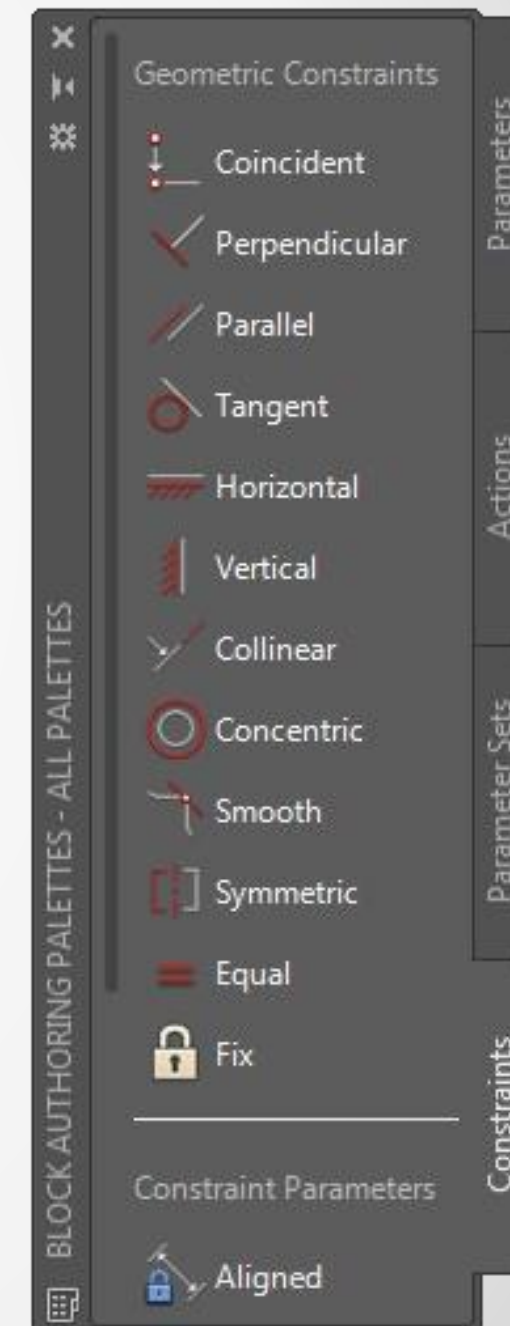
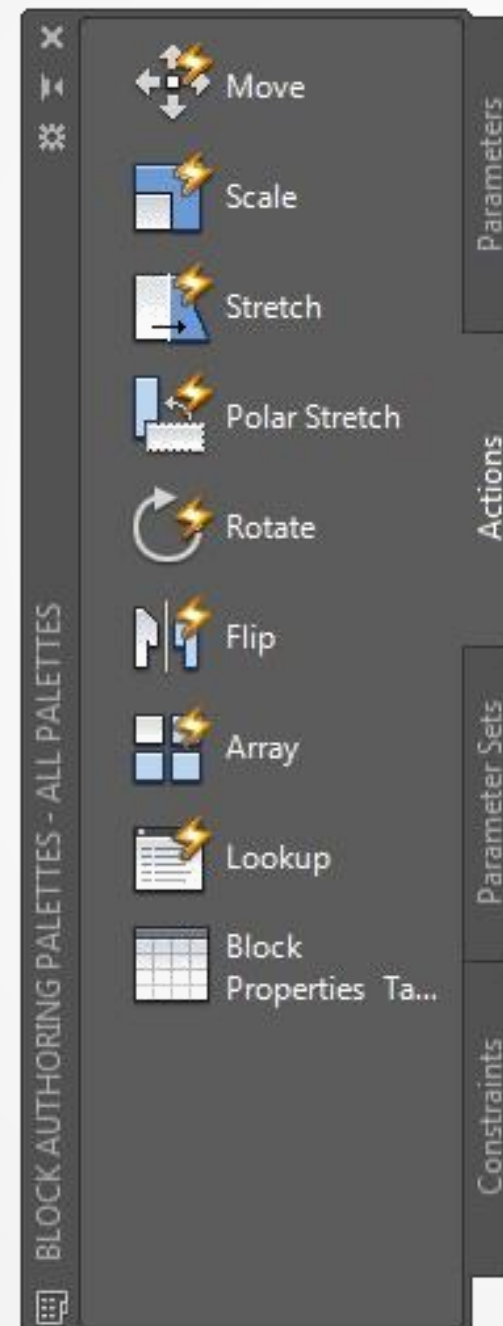
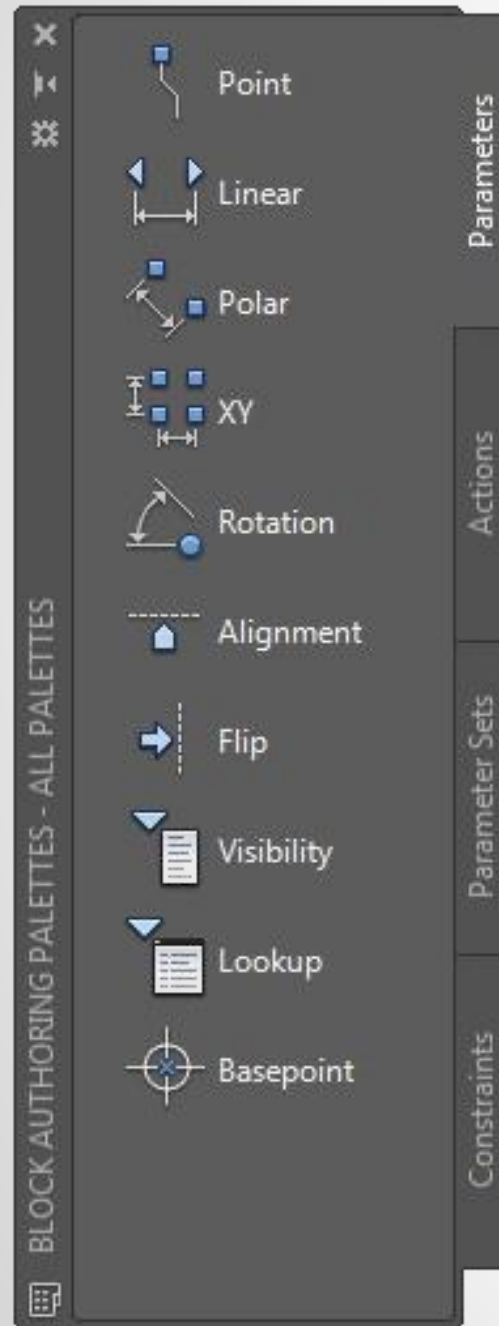
Block Creation Environment



Block Editor
Contextual Tab

Block Authoring
Tool Palettes

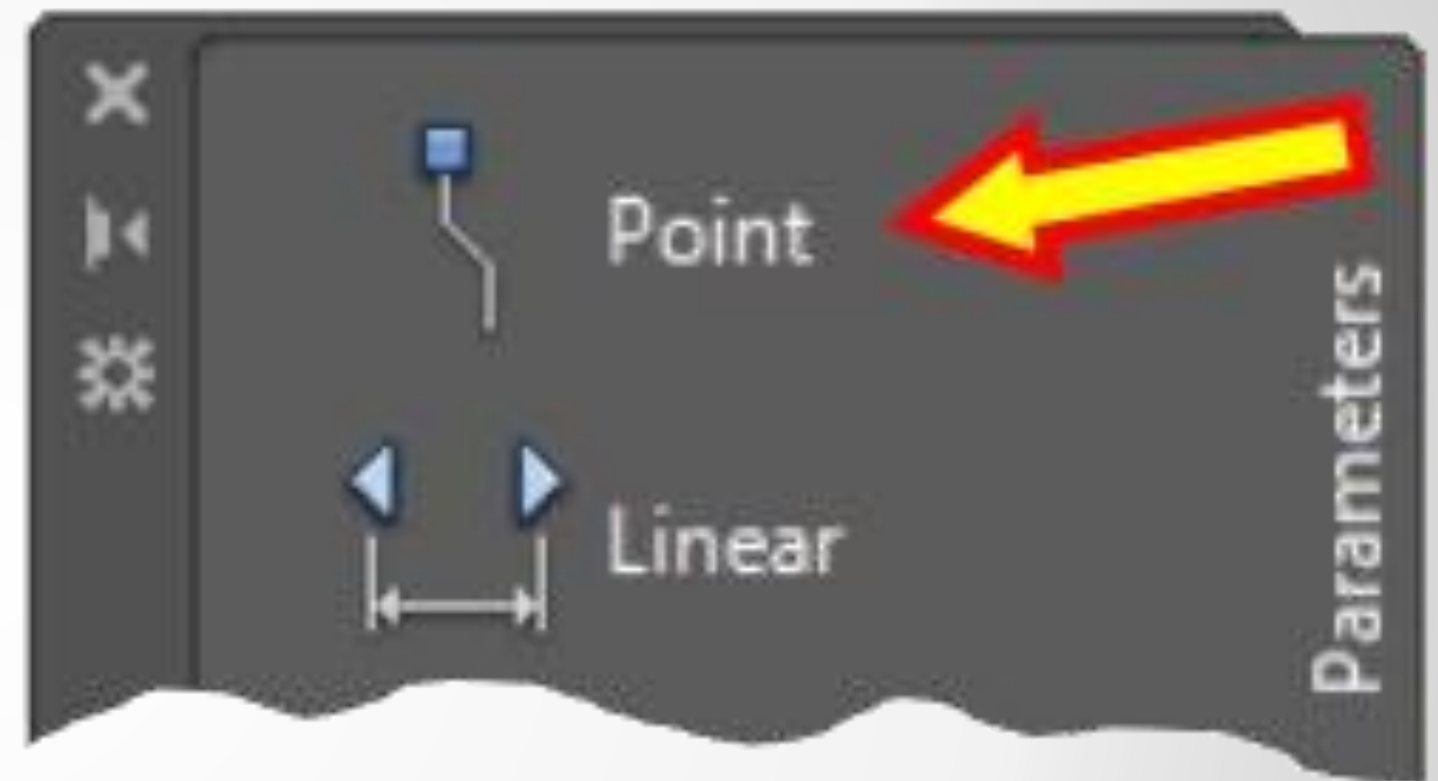
Block Authoring Palettes



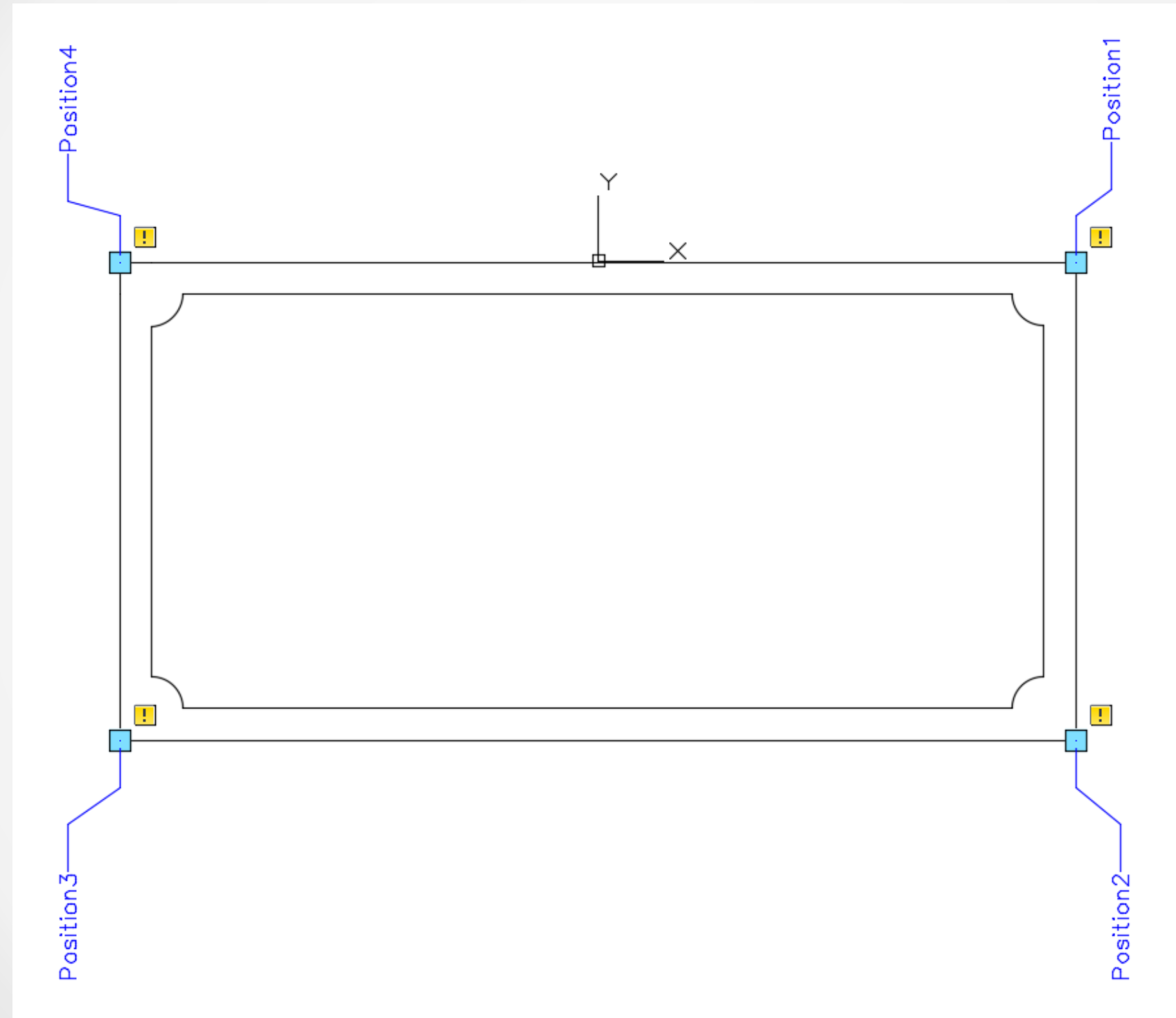
**Create Dynamic Blocks with
the following abilities:
stretch, mirror, array, rotate,
align, and multiple insertion
points**

Create Additional Insertion Points

- Use the Point Parameter
- No Action Necessary
- Press <Ctrl> key to cycle between insertion points during insertion.

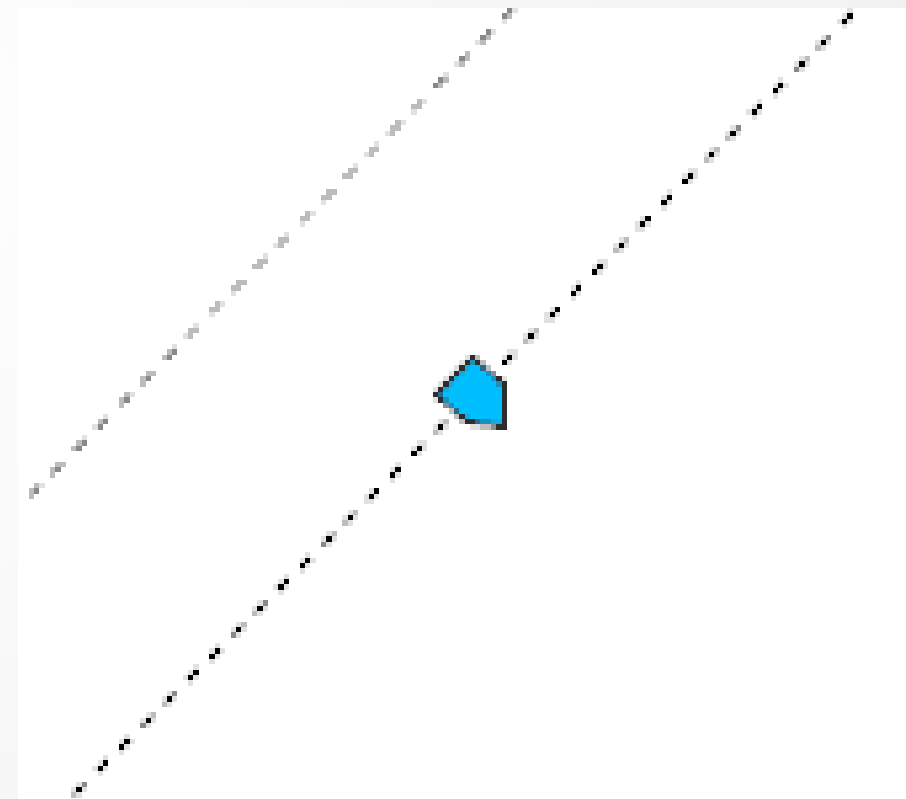


Insertion Points: Demonstration

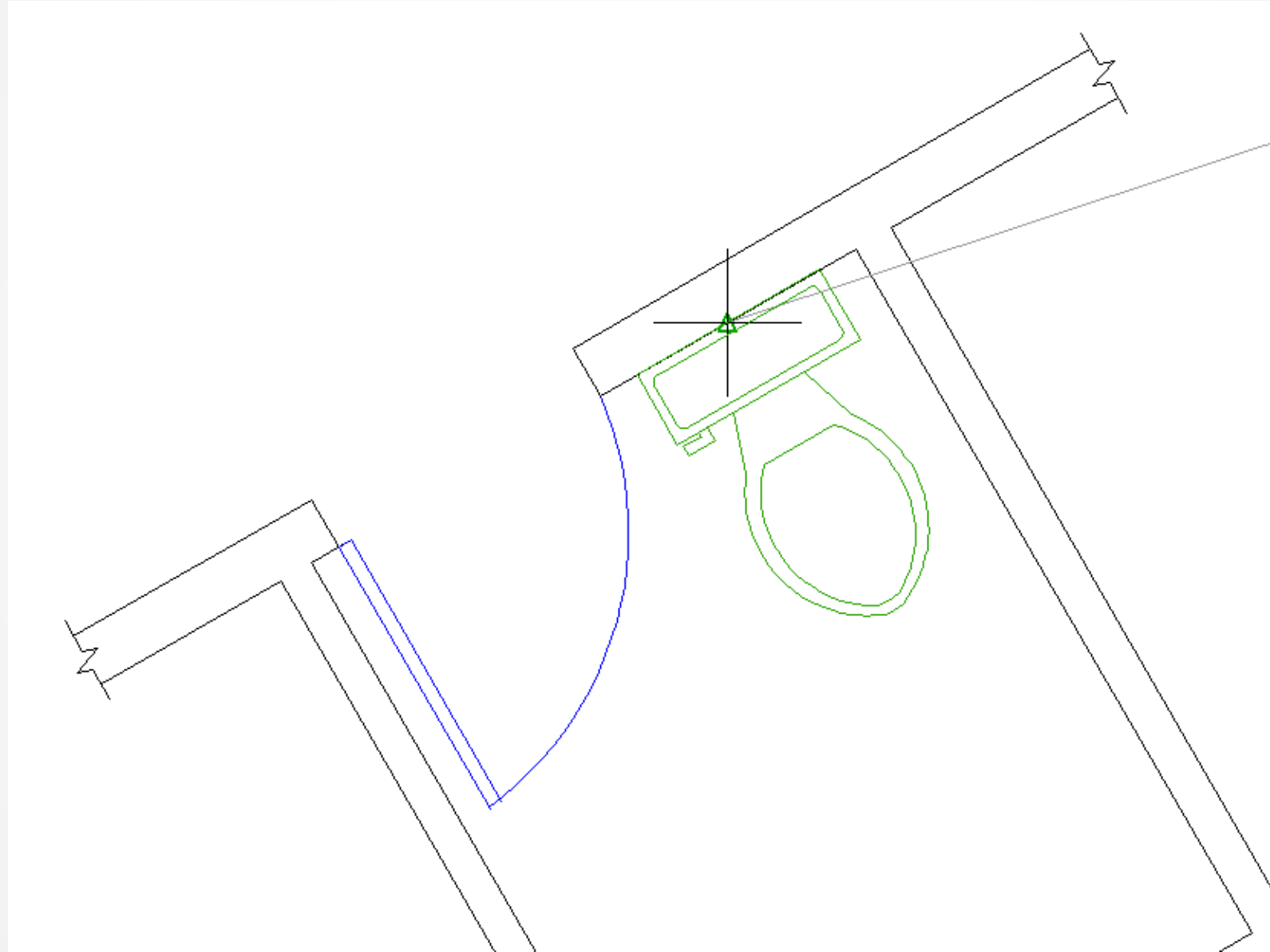


Create an Alignment Grip

- Use the Alignment Parameter
- No Action Necessary



Alignment Grip: Demonstration

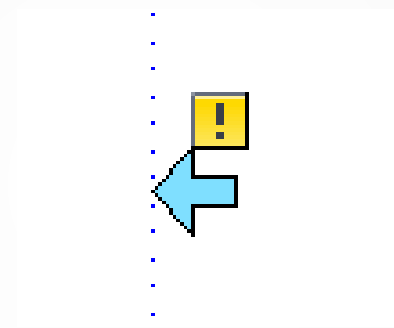


Create a Flip Grip

- Use the Flip Parameter



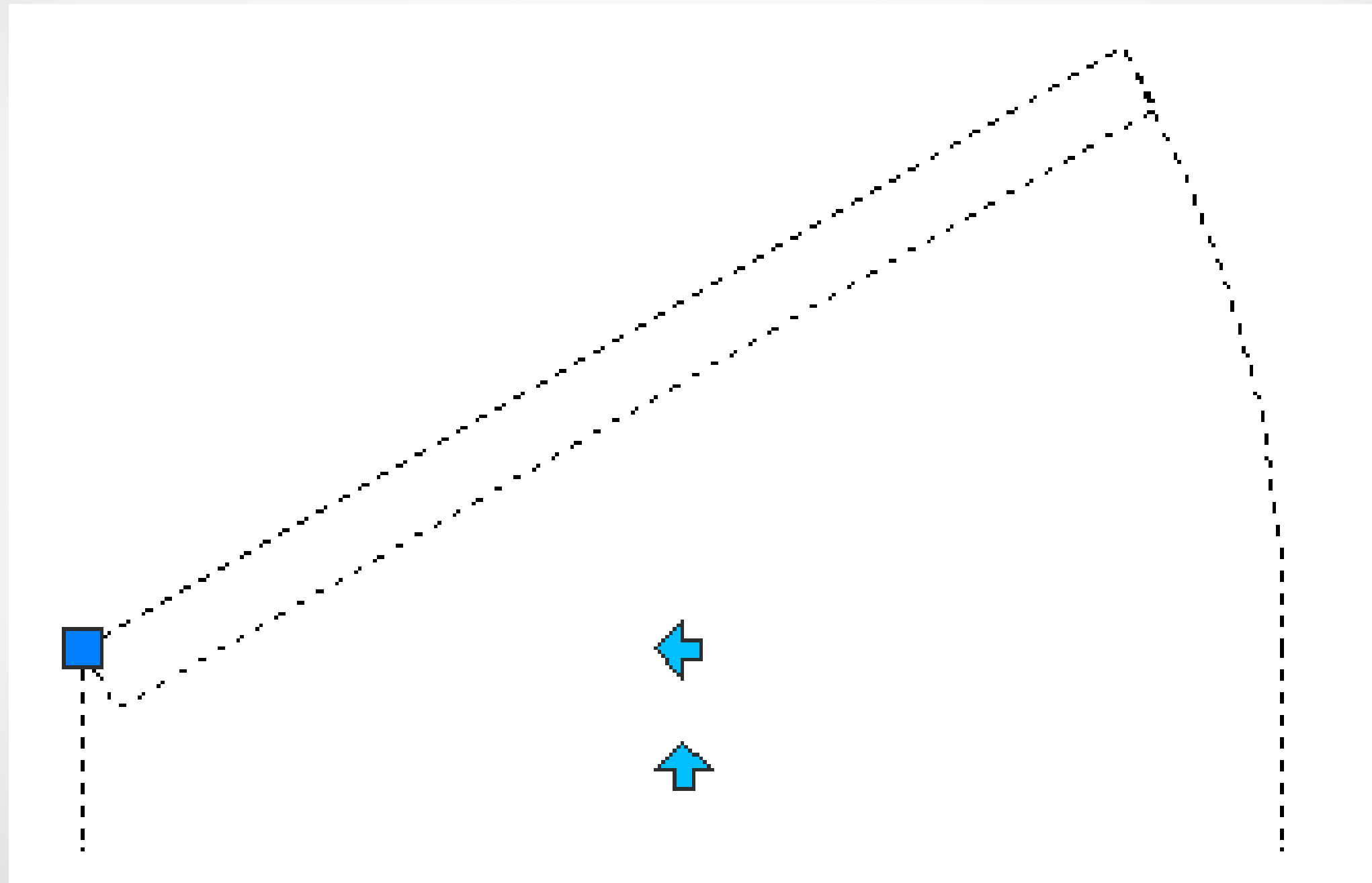
- Exclamation = Action Needed



- Use the Flip Action

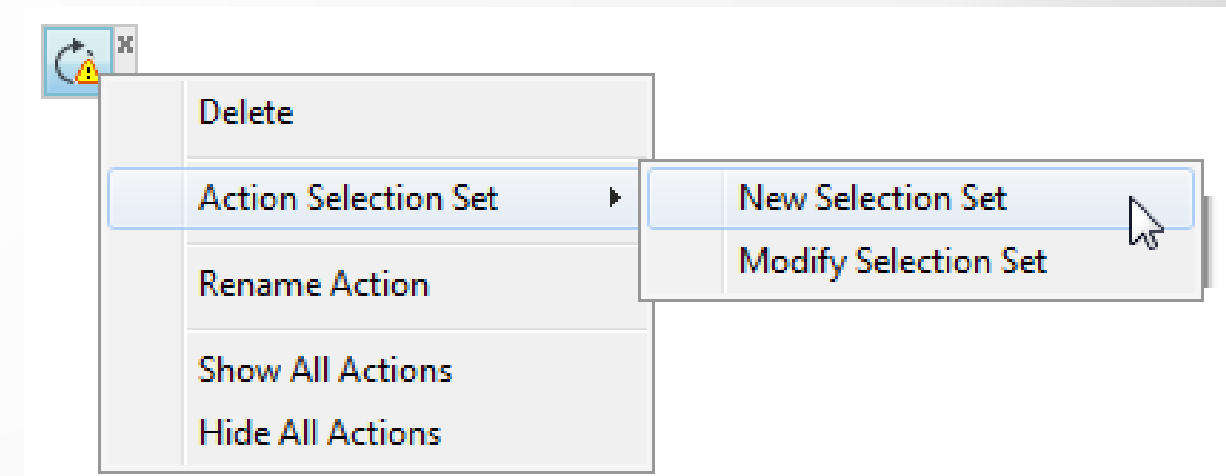
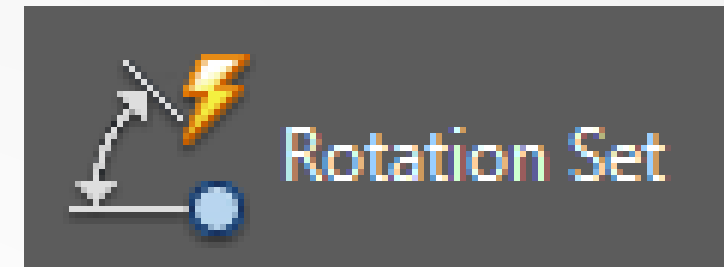


Flip Grip: Demonstration

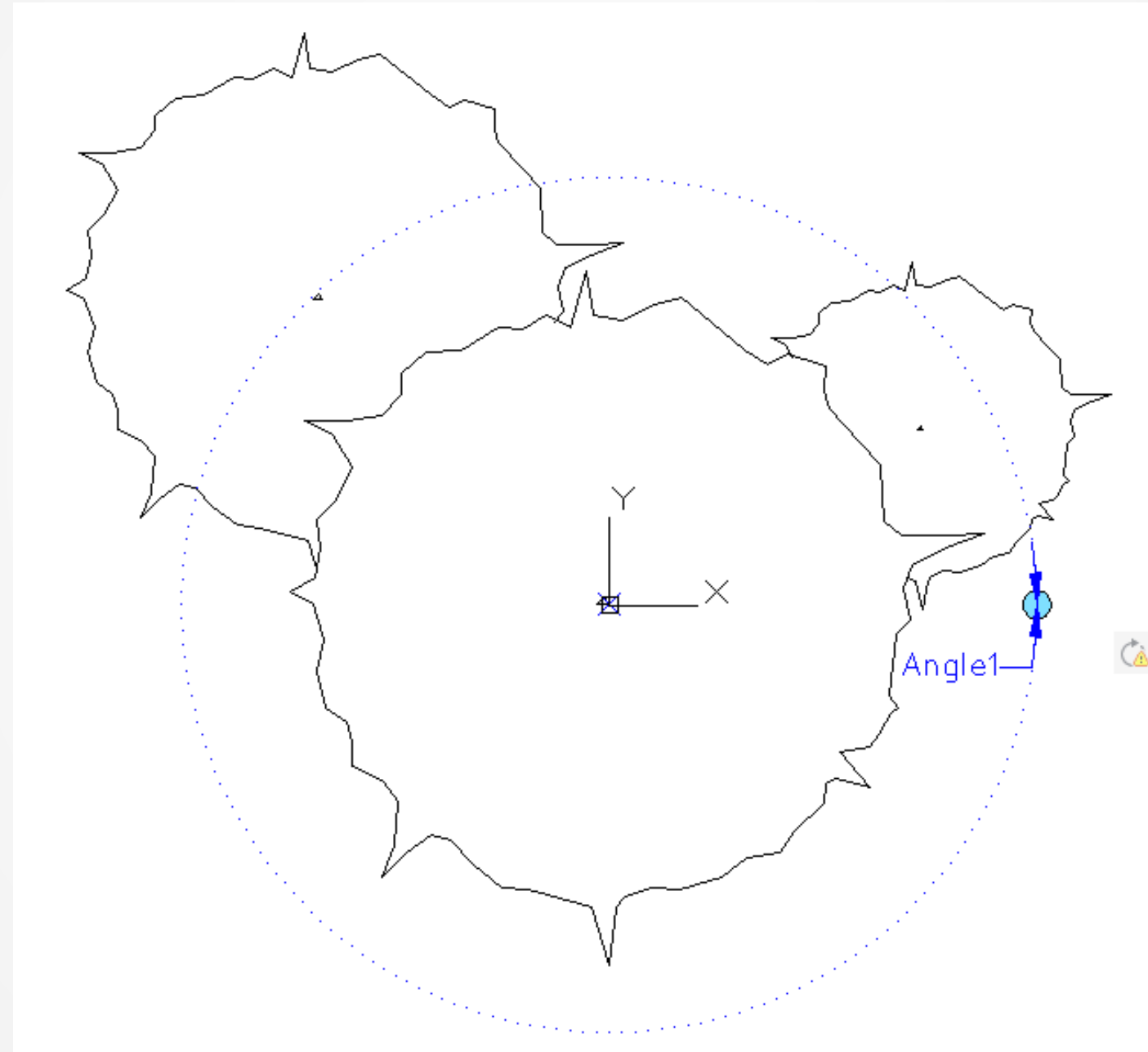


Adding the Rotation Action

- Use the Rotation Set to save steps
- Add a Selection Set to the Action

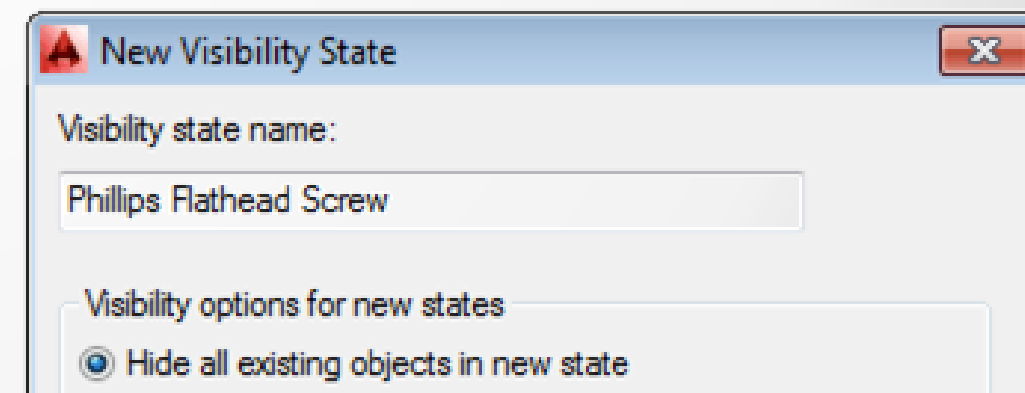
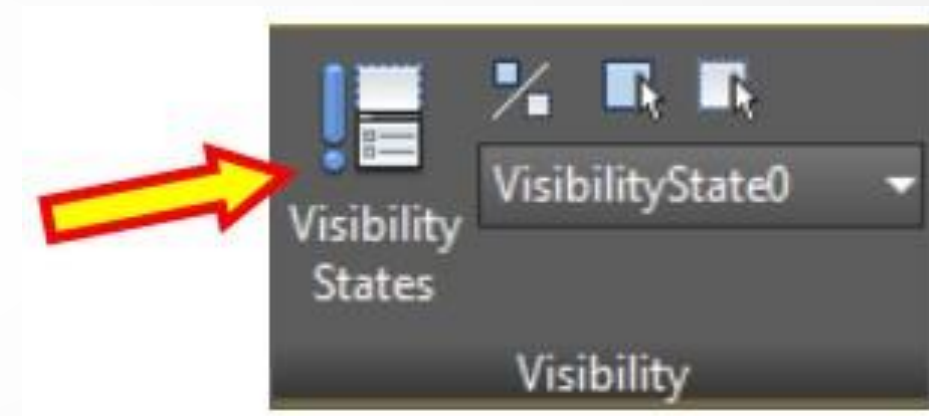
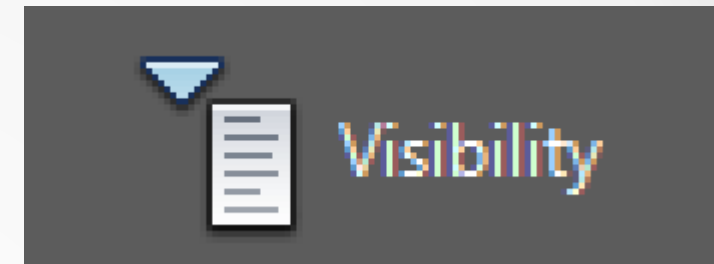


Rotation Set: Demonstration

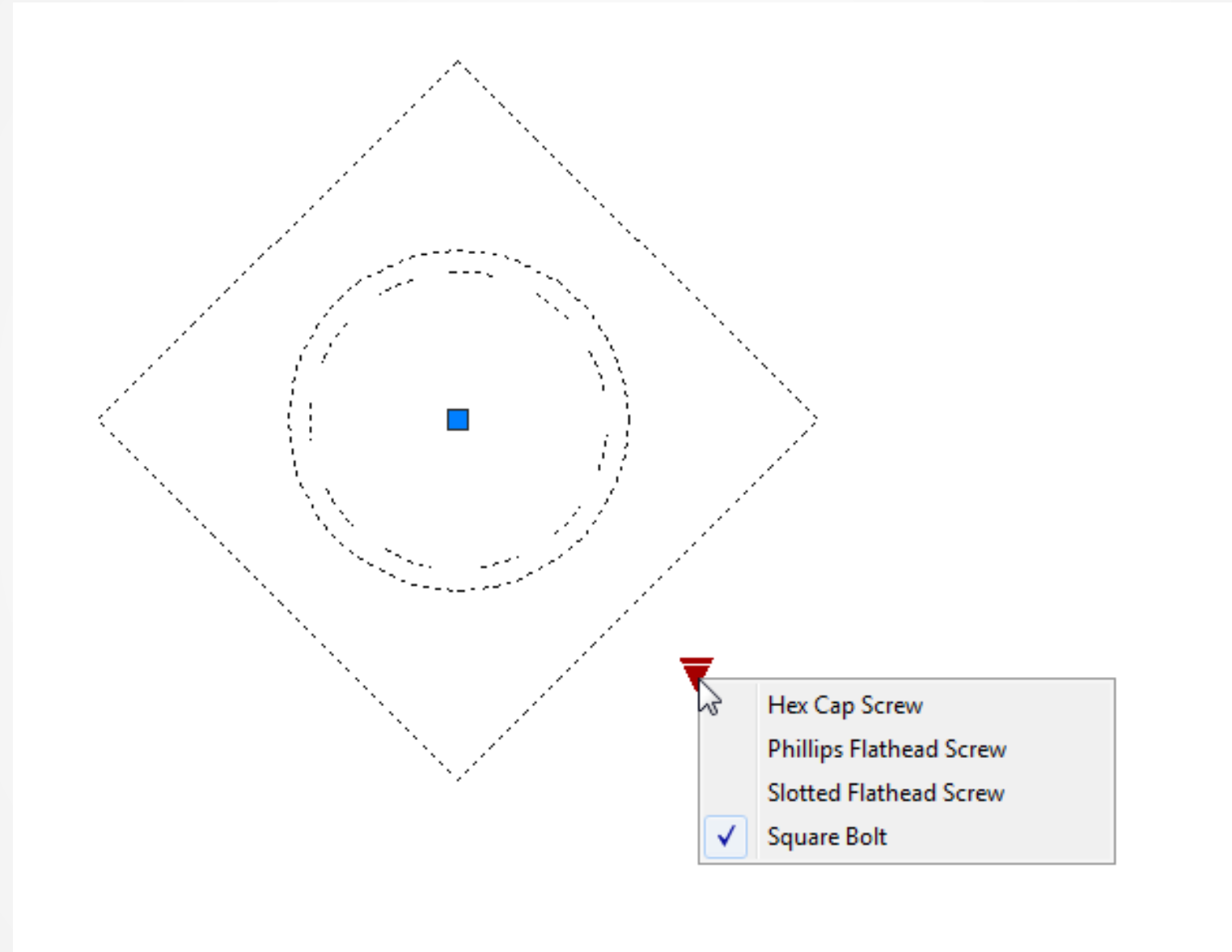


Adding the Visibility Grip

- Use the Visibility Parameter
- Use the Visibility Panel
- Create new states while hiding all others



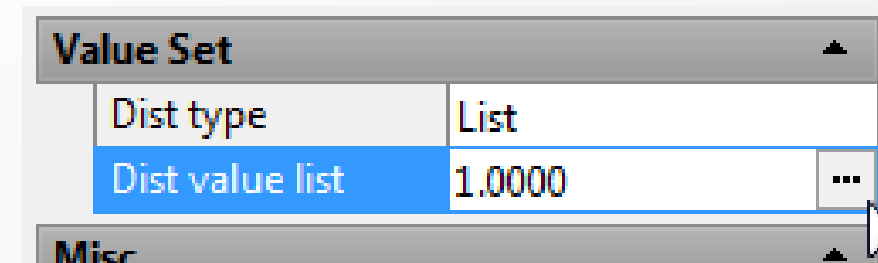
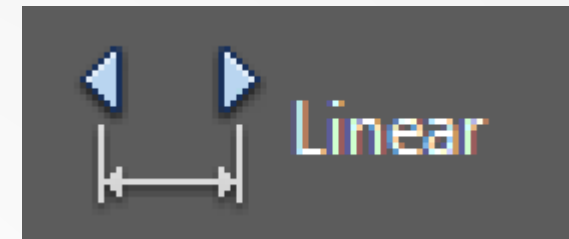
Visibility: Demonstration



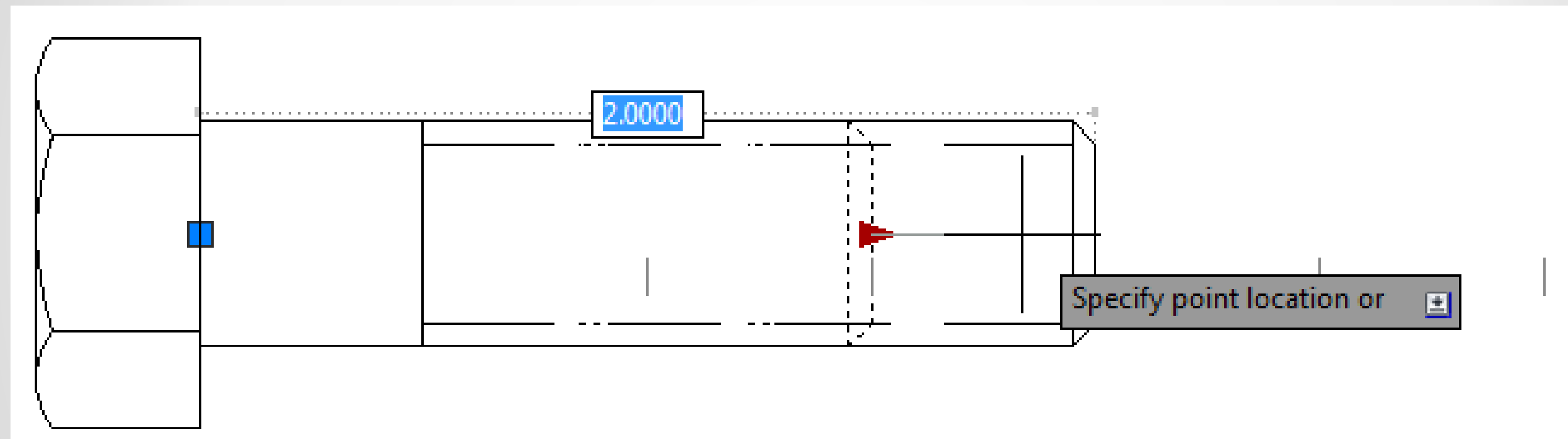
Limit block variations through lists and increments

Adding the Stretch Action and Limiting with Lists

- Use the Linear Parameter
- Use the Stretch Action
- Use Properties to create an allowable list of values.

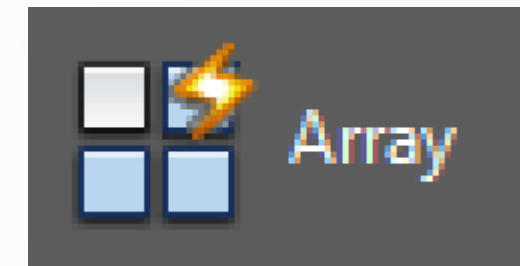
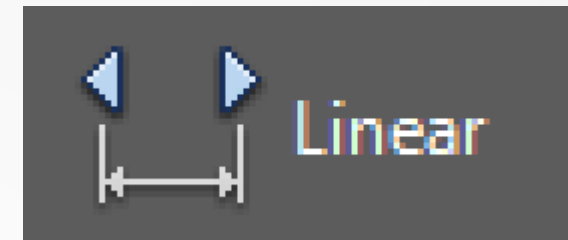


Stretch/List: Demonstration



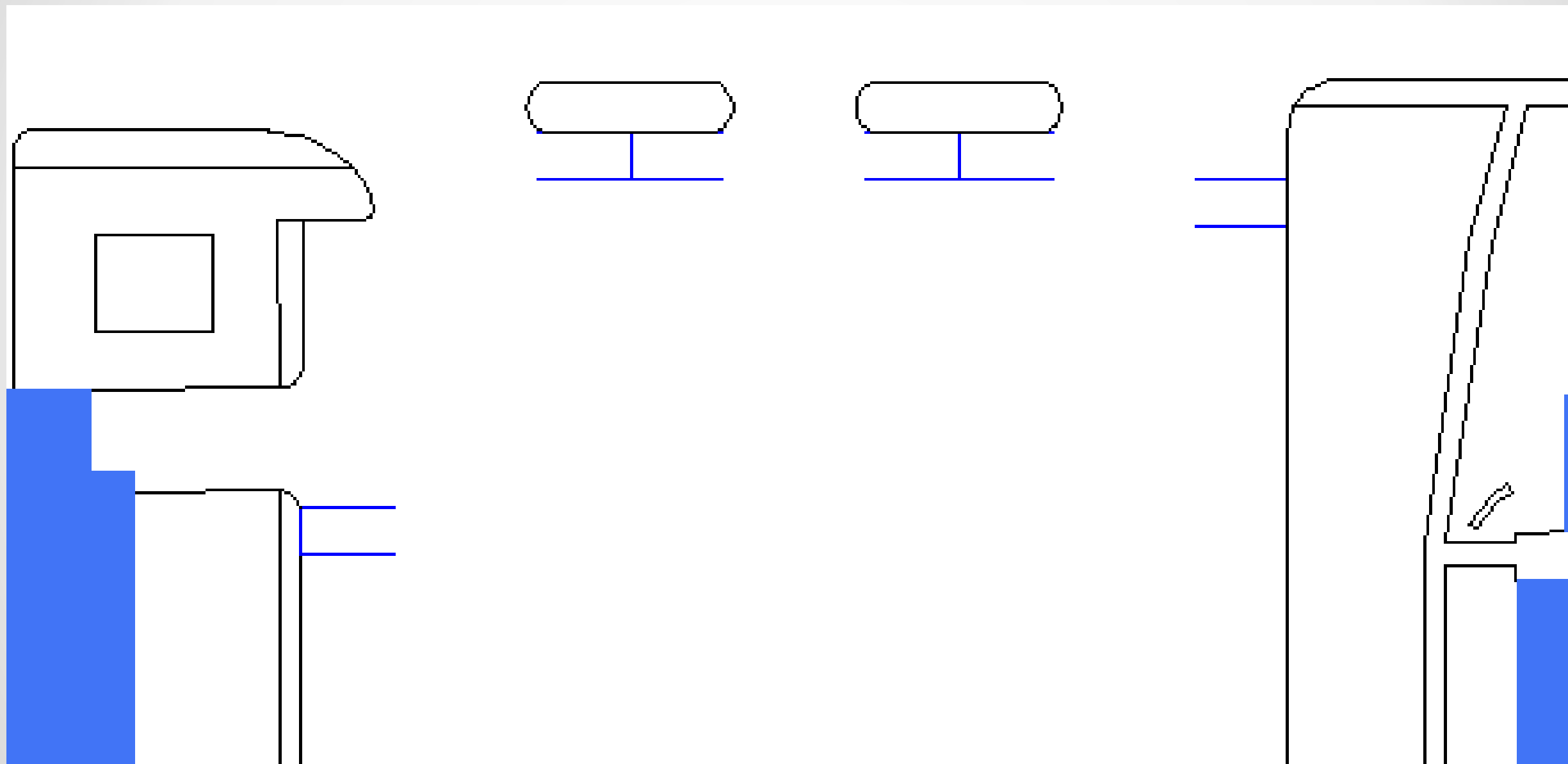
Adding the Array Action and Limiting with Increments

- Use the Linear Parameter
- Use the Array Action
- Use the Increment option to limit values



Value Set	
Dist type	Increment
Dist increment	9.0000
Dist minimum	0.0000
Dist maximum	

Array/Increment: Demonstration

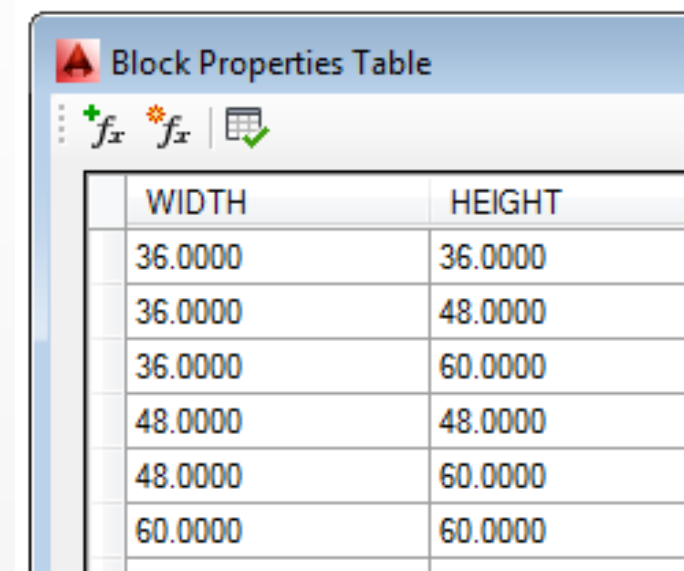
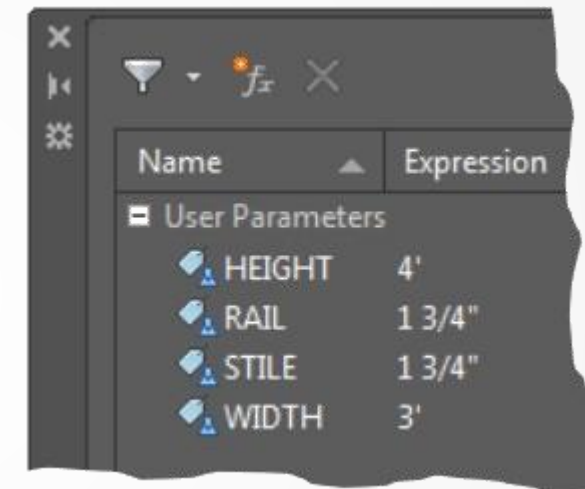


Apply constraints and parameters to control block behavior

Implement Block Tables as well as the Lookup Action to quickly select the desired block iteration

Using Parameters

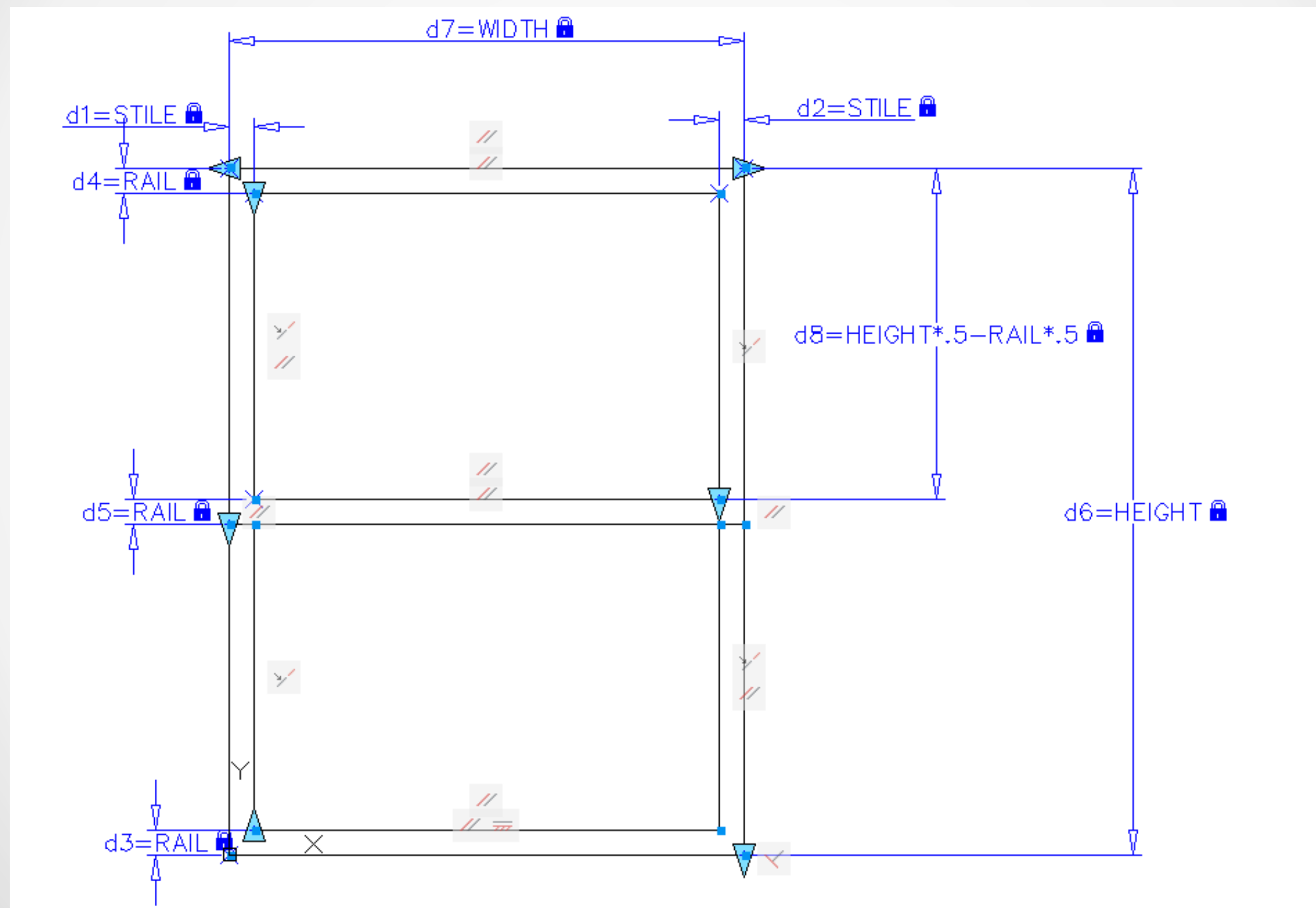
- Constrain Geometry
- Create Named Parameters
- Create a block table to drive Parameters



A screenshot of the Block Properties Table in AutoCAD. The table has two columns: 'WIDTH' and 'HEIGHT'. The values in the table are as follows:

WIDTH	HEIGHT
36.0000	36.0000
36.0000	48.0000
36.0000	60.0000
48.0000	48.0000
48.0000	60.0000
60.0000	60.0000

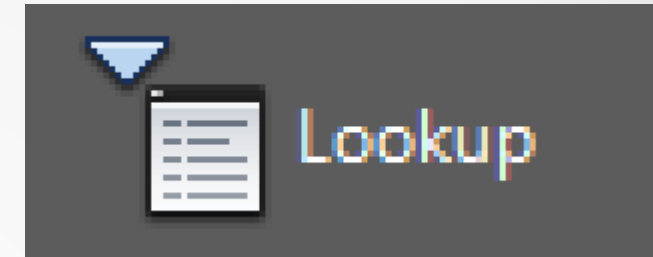
Parameters: Demonstration



Implement Block Tables as well as the Lookup Action to quickly select the desired block iteration

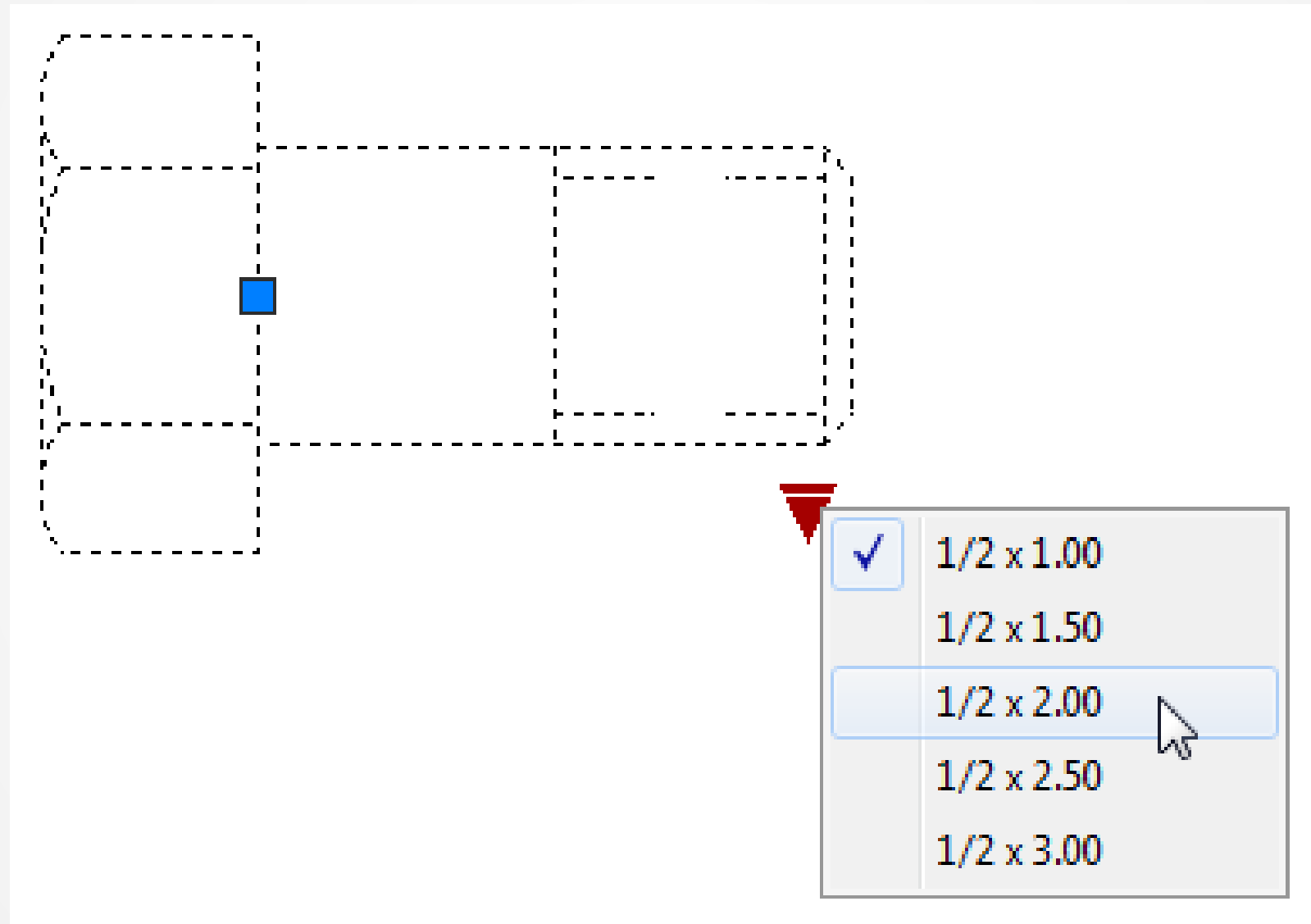
Adding the Lookup Action

- Use the Lookup Parameter
- Use the Lookup Action
- Create a list of Lookup Values



Input Properties		Lookup Properties
	Distance1	Lookup1
	1.0000	1/2 x 1.00
	1.5000	1/2 x 1.50
	2.0000	1/2 x 2.00
	2.5000	1/2 x 2.50
▶	3.0000	1/2 x 3.00

Lookup: Demonstration



Conclusion

- Now it's your turn! Take these skills back to work and improve your productivity!
- Questions?
 - @betweencadclass
 - chadwickt@hutchcc.edu

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