

A Dynamic Lab on Dynamic Block Creation in AutoCAD

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About the speaker

Tracy Chadwick

AutoCAD user since 1995

Hutchinson Community College since 2001

Author of *A Practical Guide to AutoCAD 2020*

All-Star Lab Assistants

- Rick Ellis
- KaDe King
- Sam Lucido

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, increments, block tables, and lookup actions
- Apply constraints and parameters to control block behavior
- Extract dynamic block properties to AutoCAD tables and Excel spreadsheets

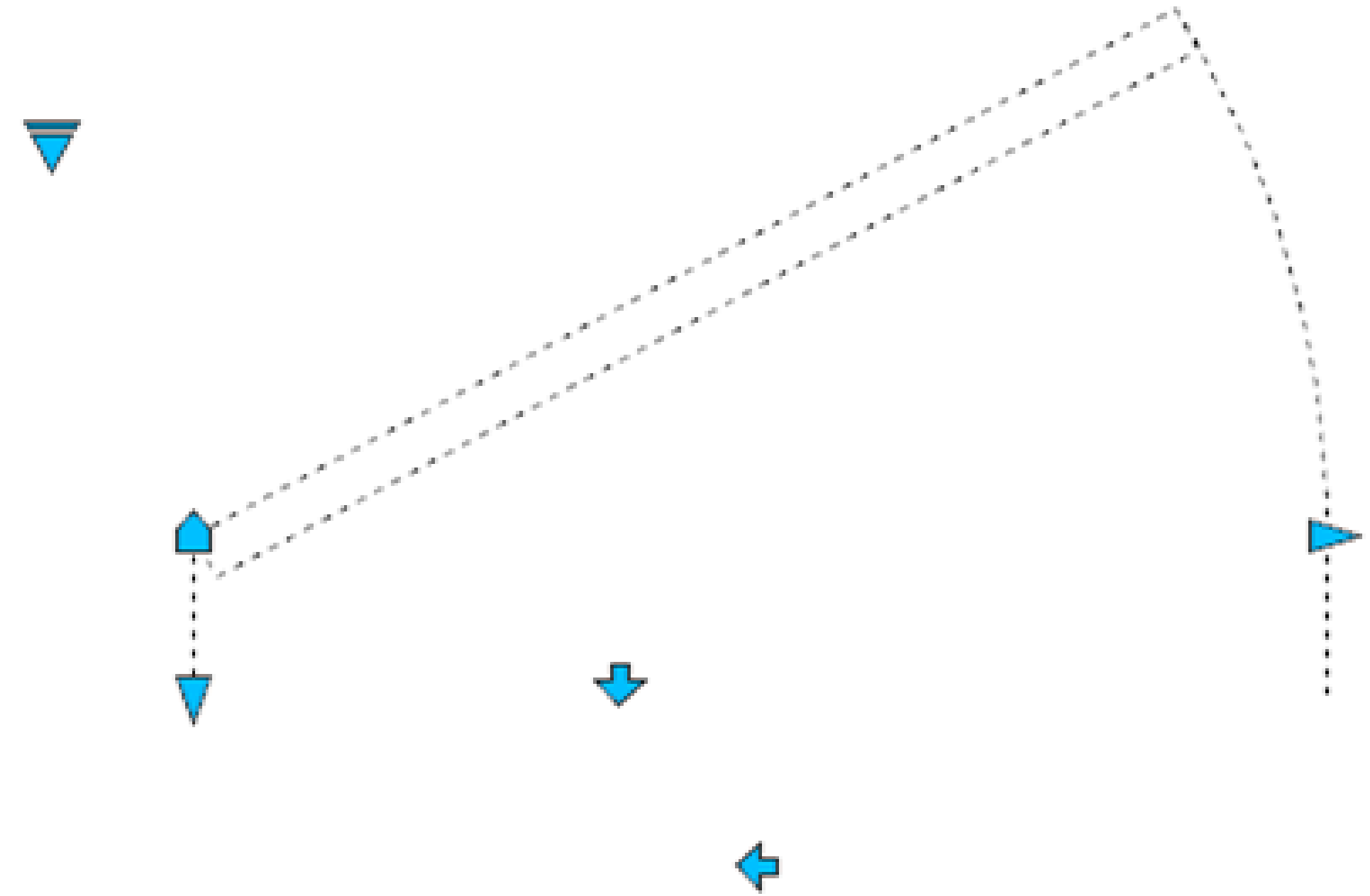
Who are you?

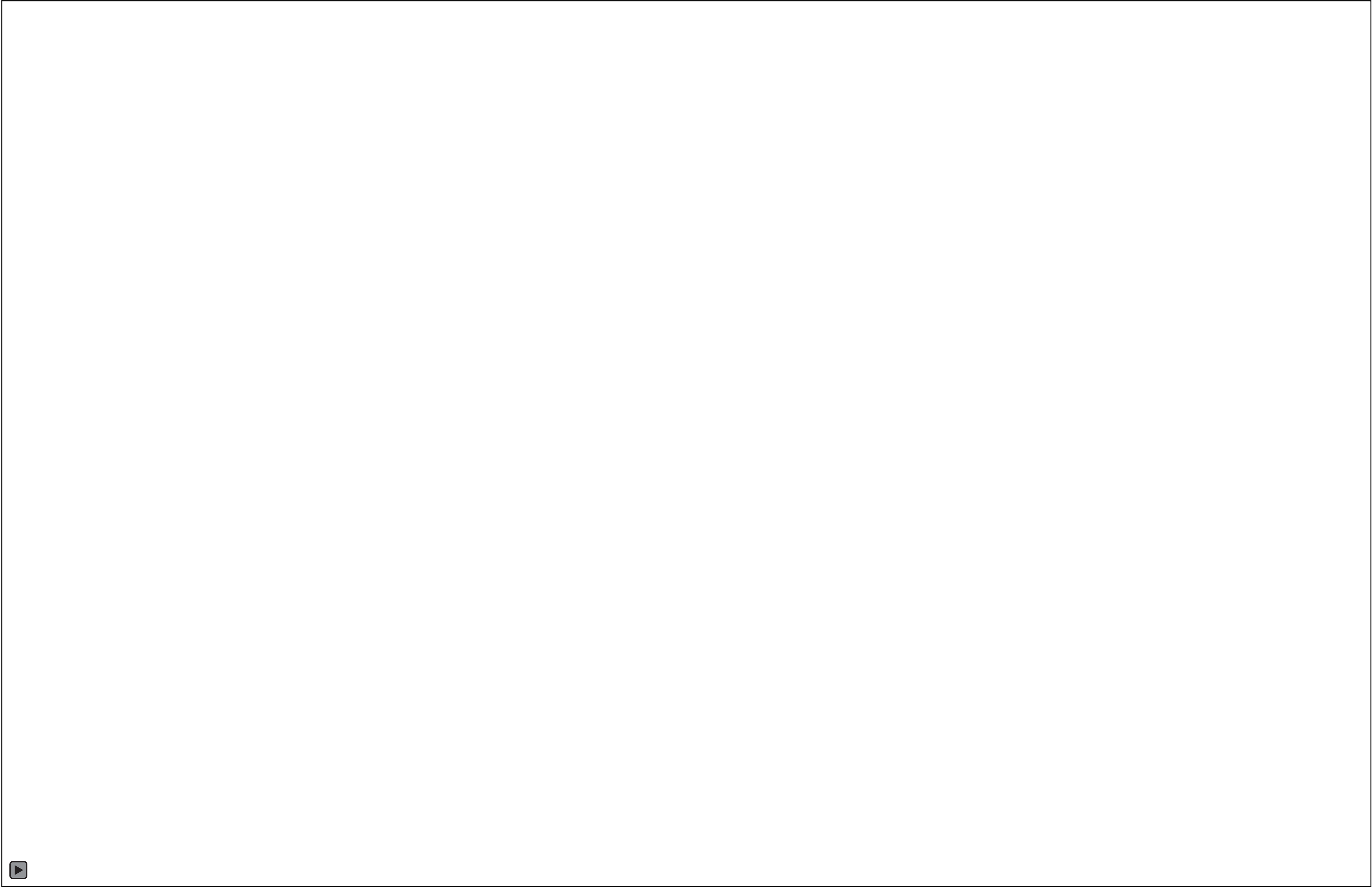
- I have already created Dynamic Blocks but I am looking for some tips and tricks.
- I have never created a Dynamic Block before and I am here to learn how to create my first Dynamic Block!
- The class I really wanted was full.

Why Dynamic Blocks?

Simplify your block library.

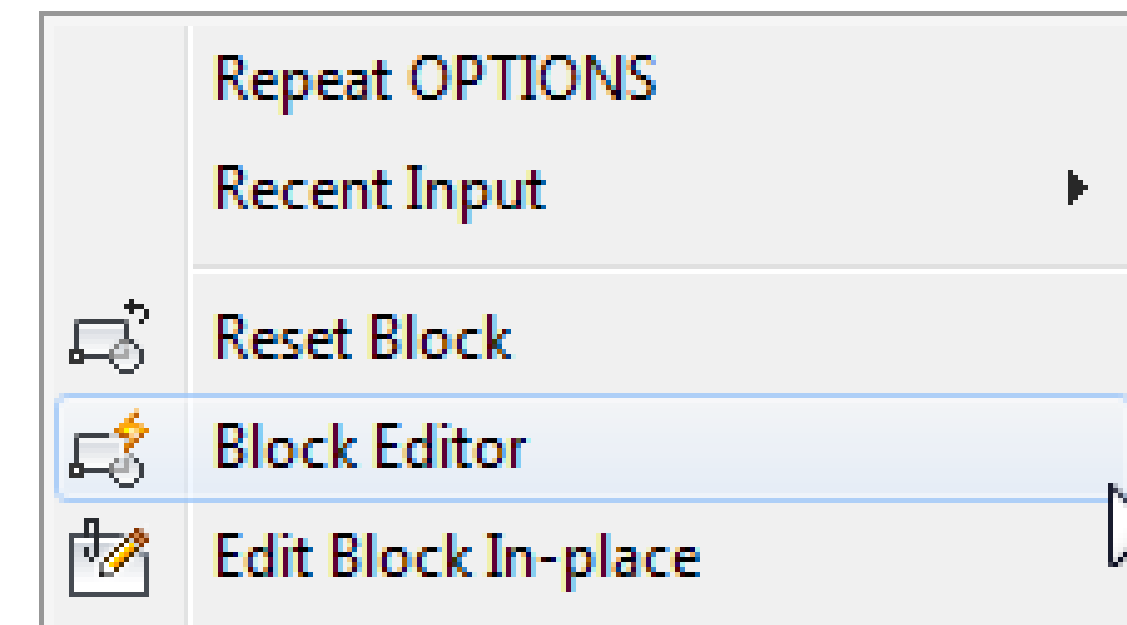
Modify blocks quickly and easily.



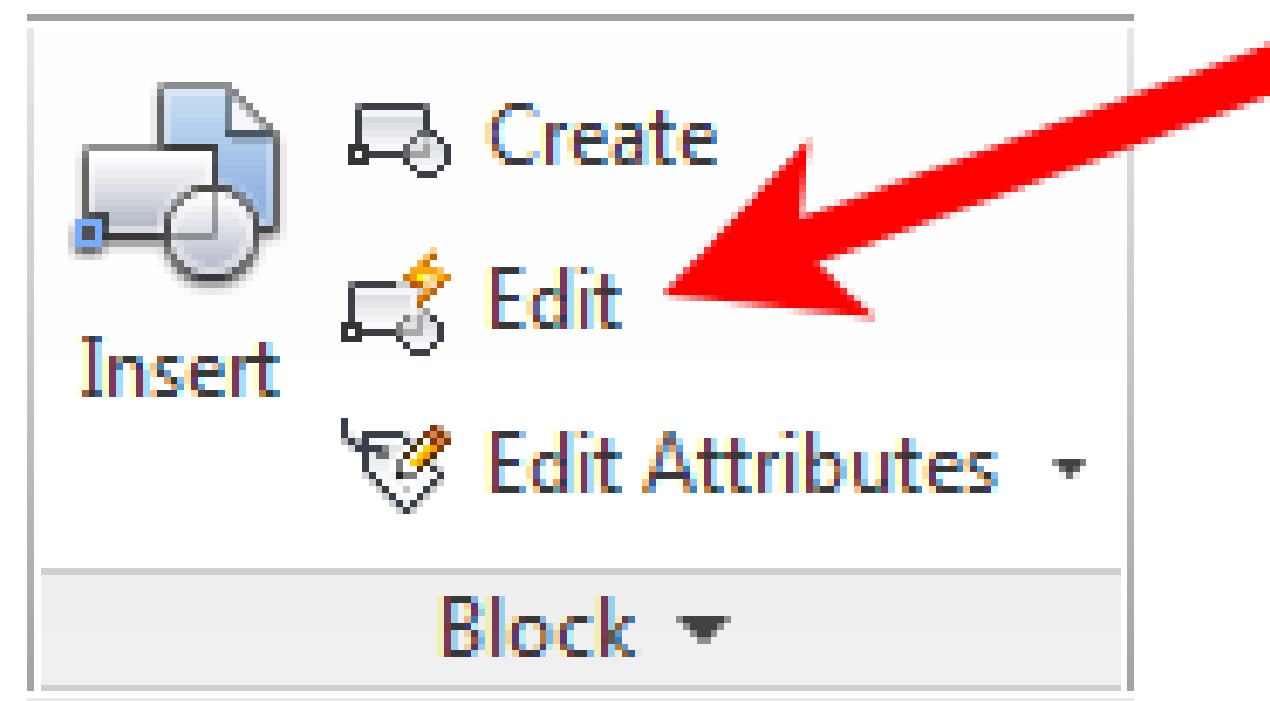


Block Creation Environment

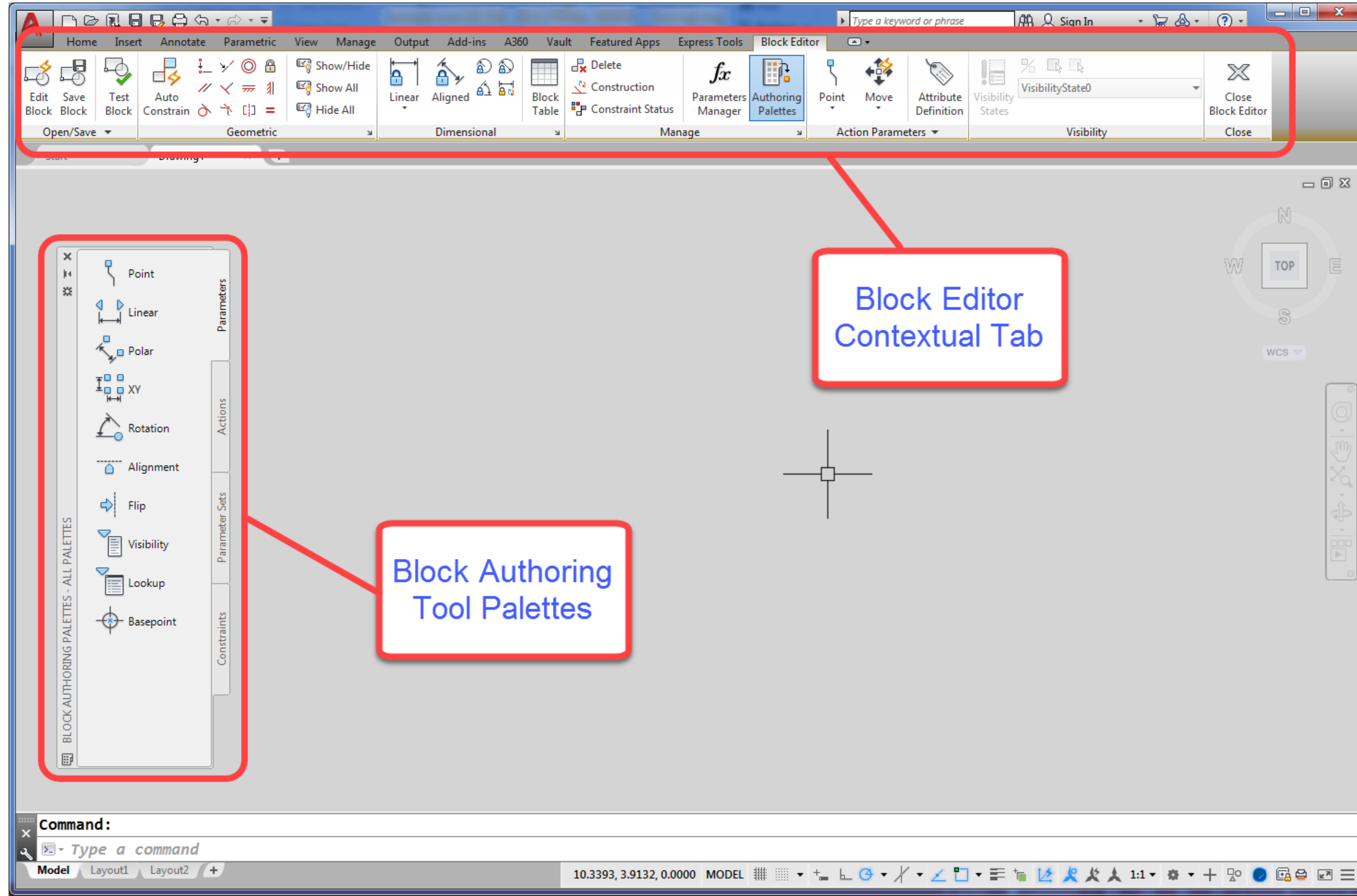
- Double-click on a block (with exceptions...)
- Select the block and right-click



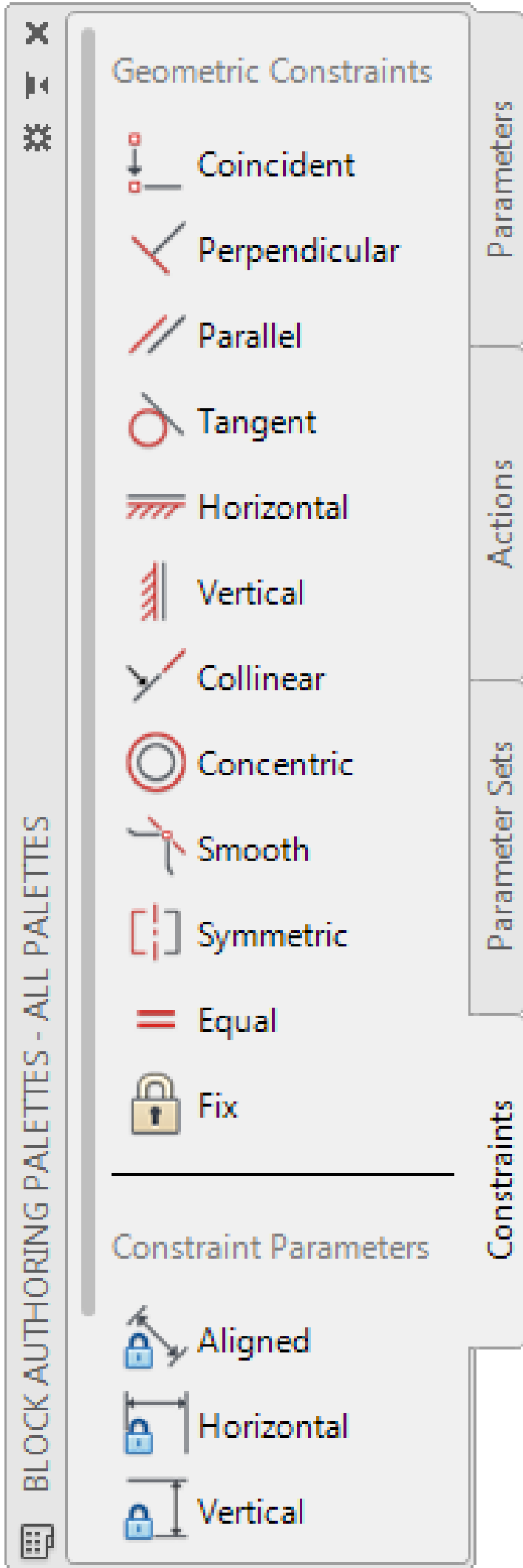
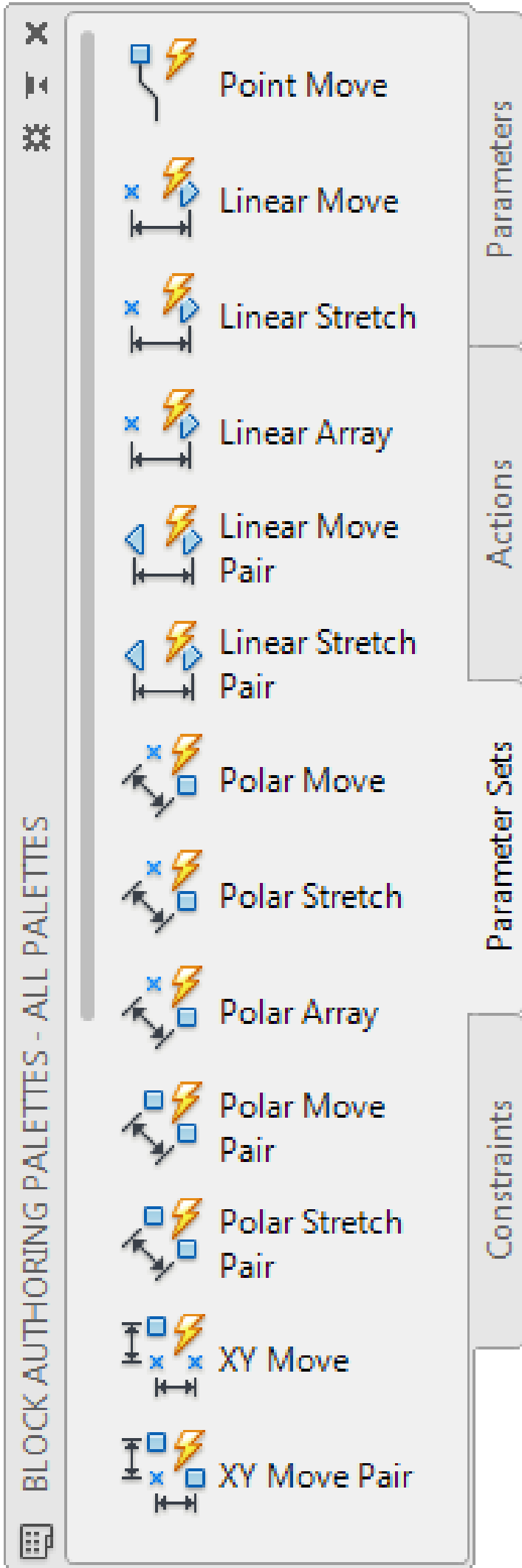
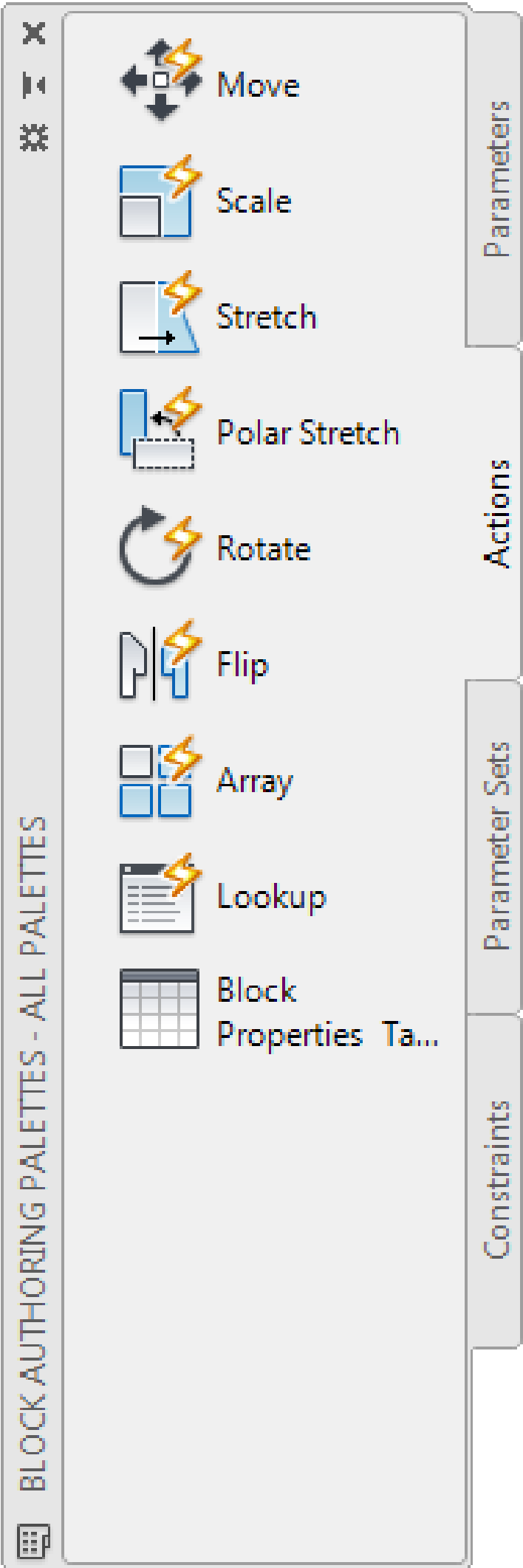
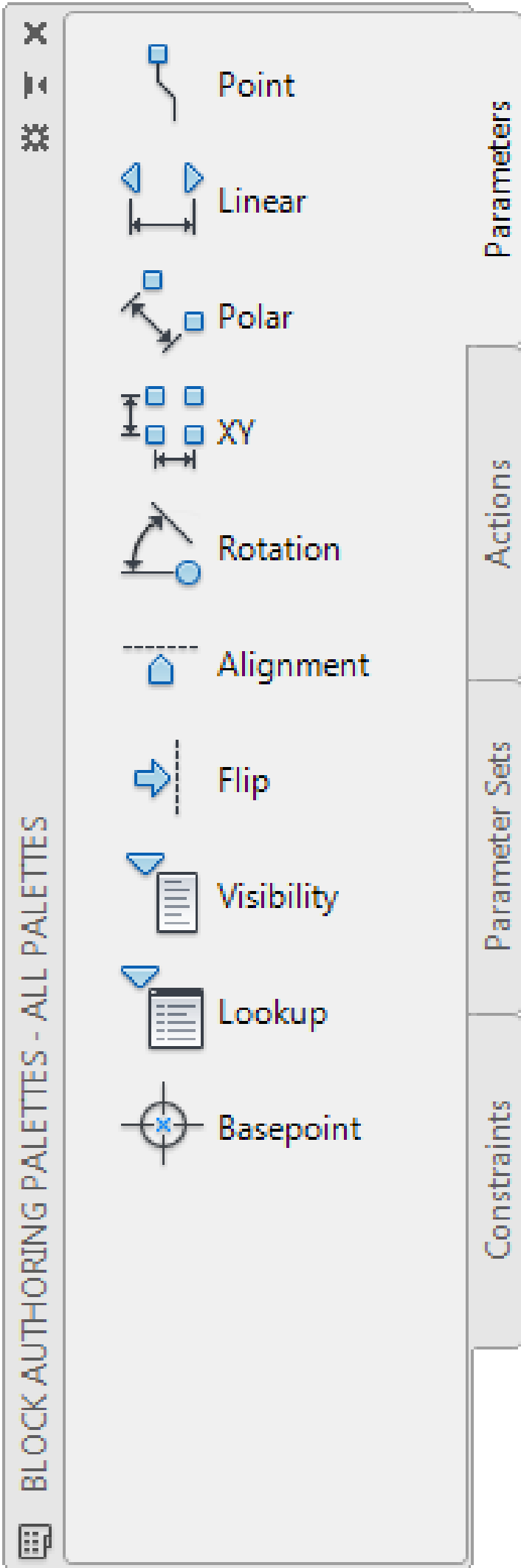
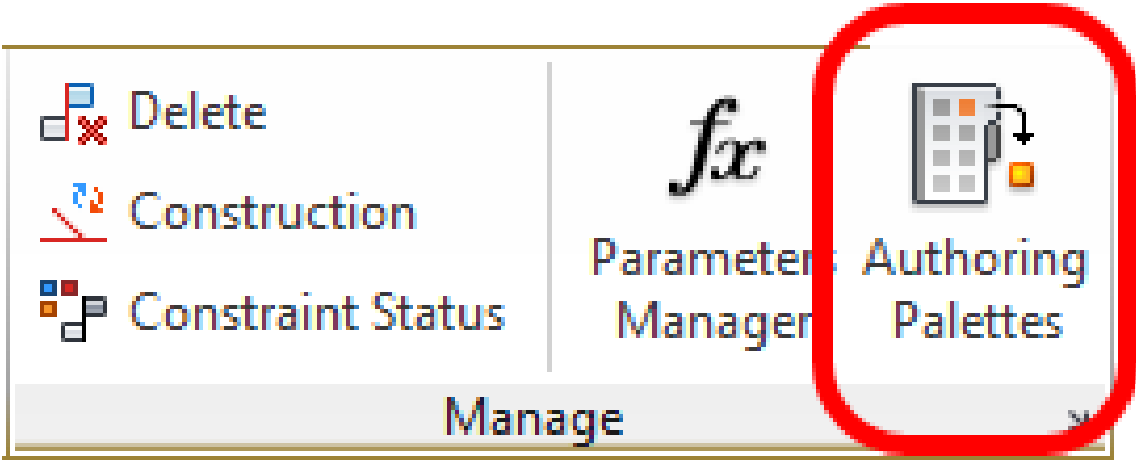
- Home > Block > Edit



Block Creation Environment



Block Authoring Palettes

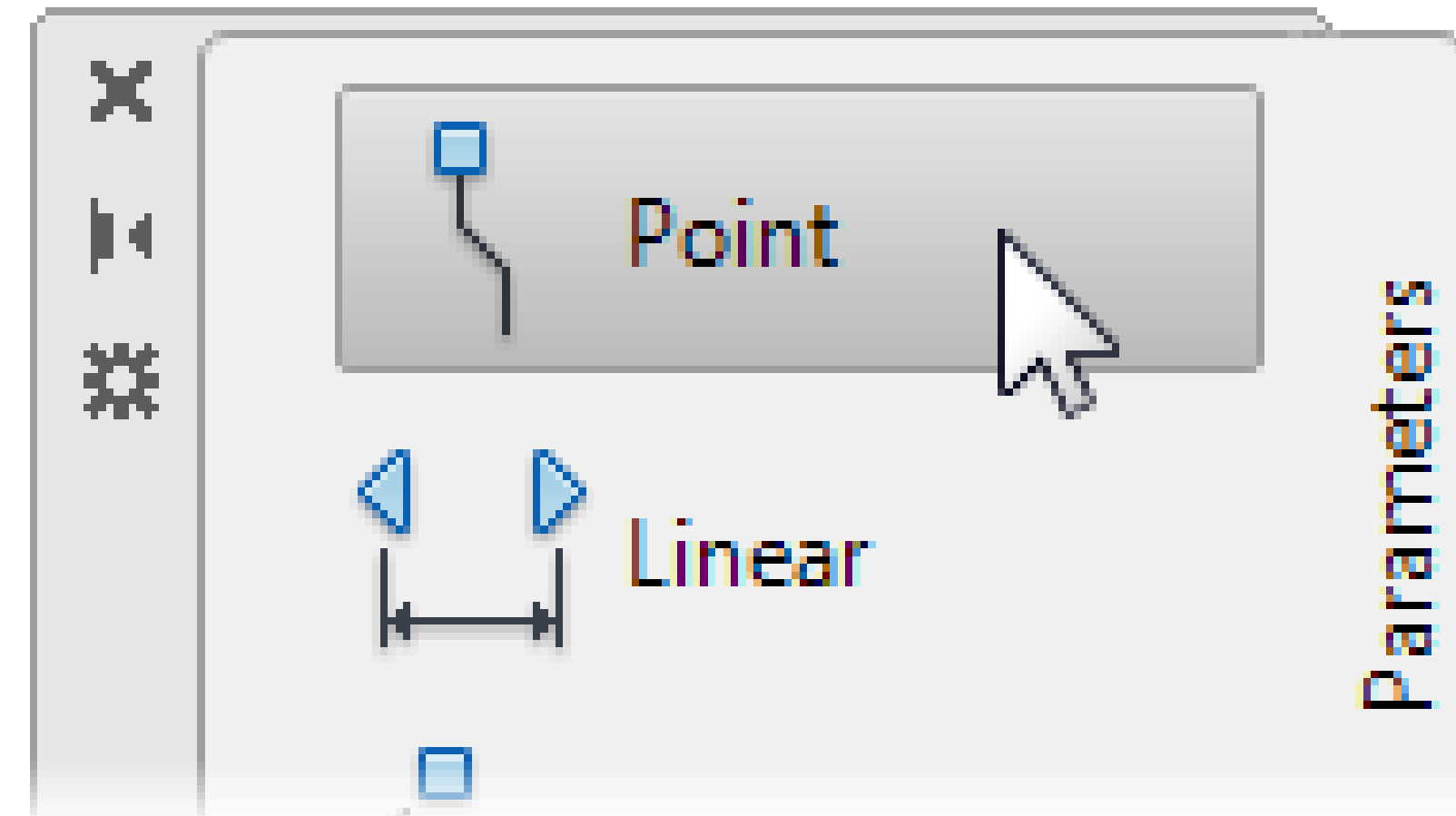


Create Dynamic Blocks with the following abilities: stretch, mirror, array, rotate, align, and multiple insertion points



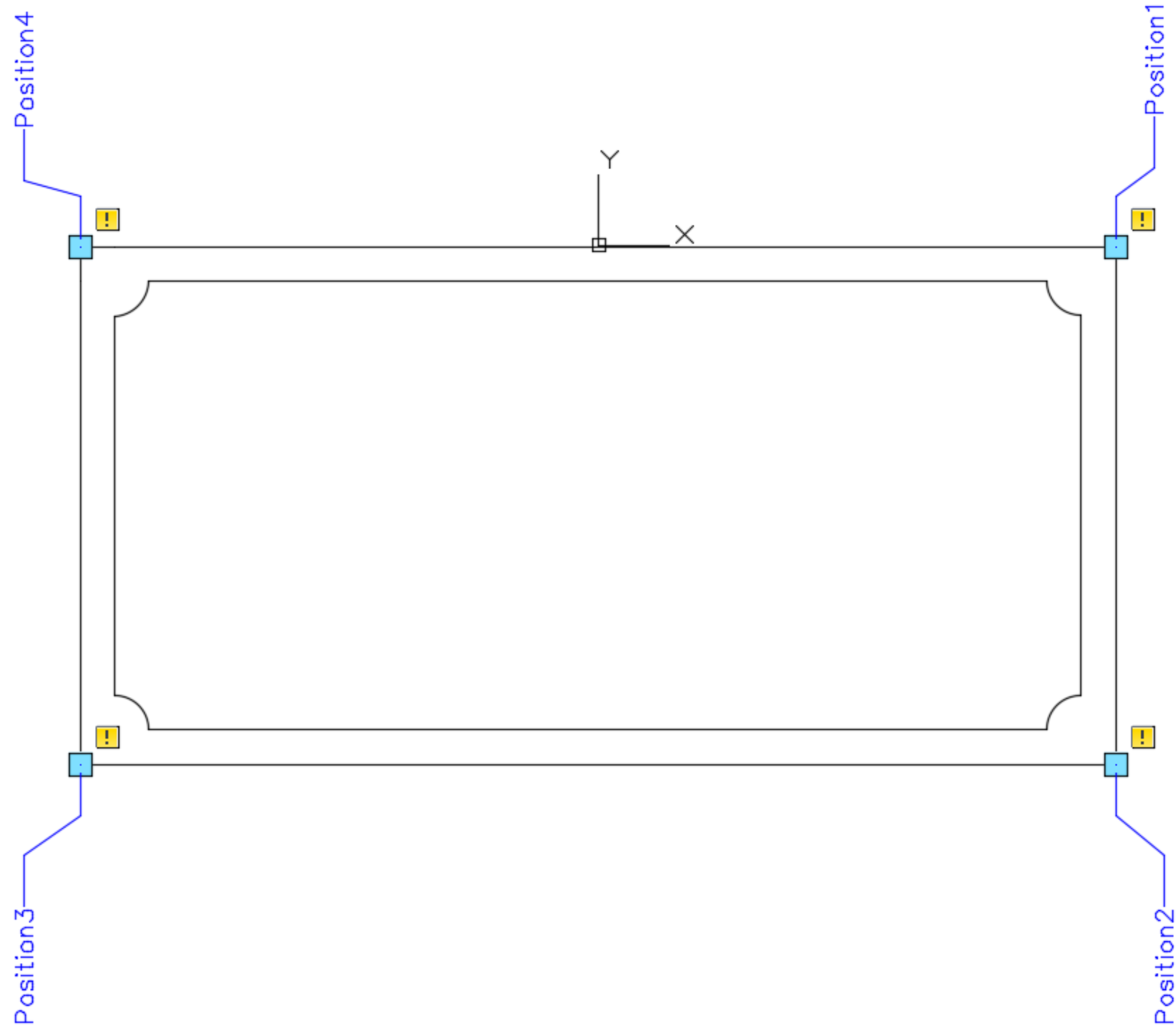
Create Additional Insertion Points

- Use the Point Parameter
- No Action Necessary
- Press <Ctrl> key to



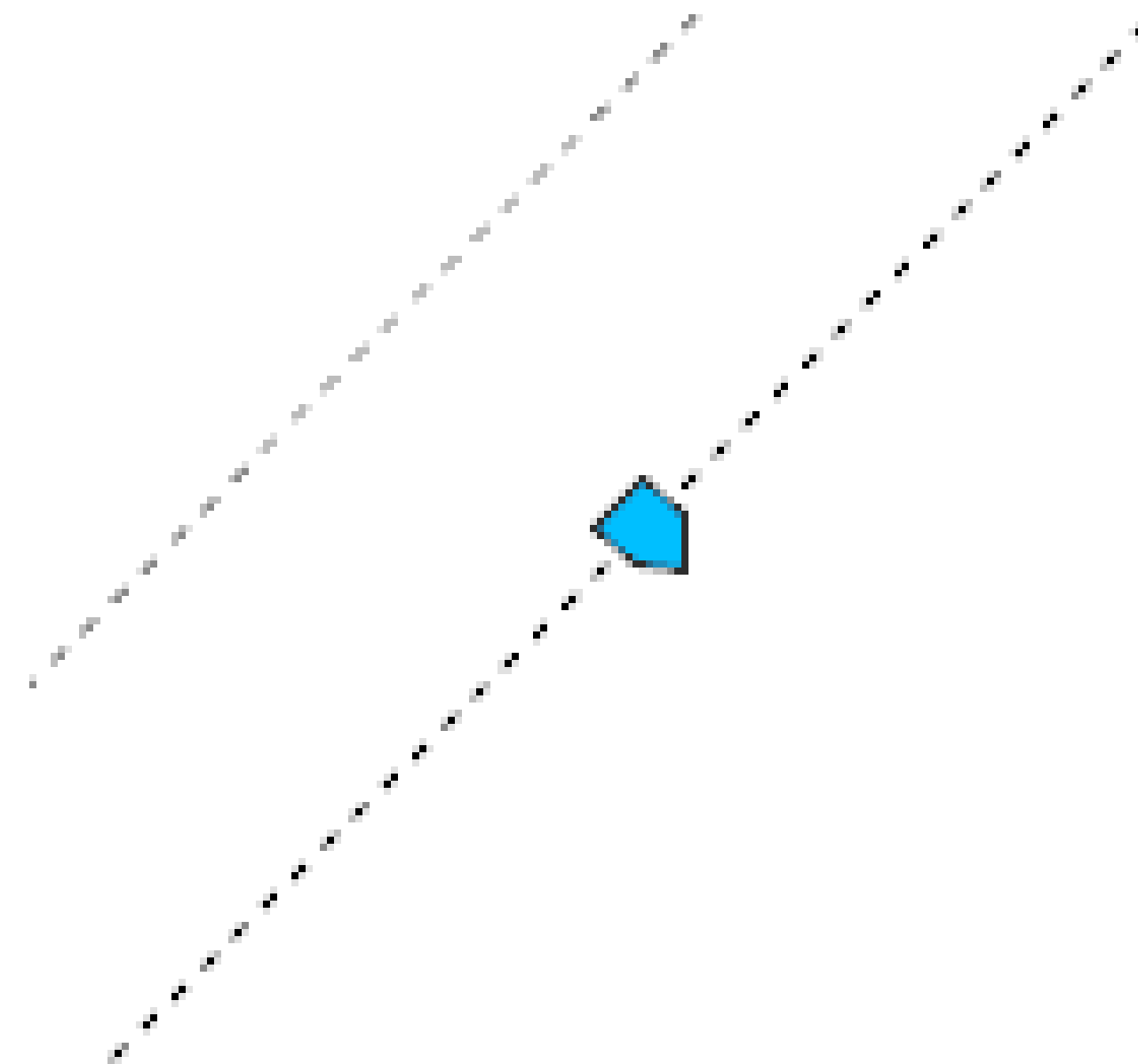
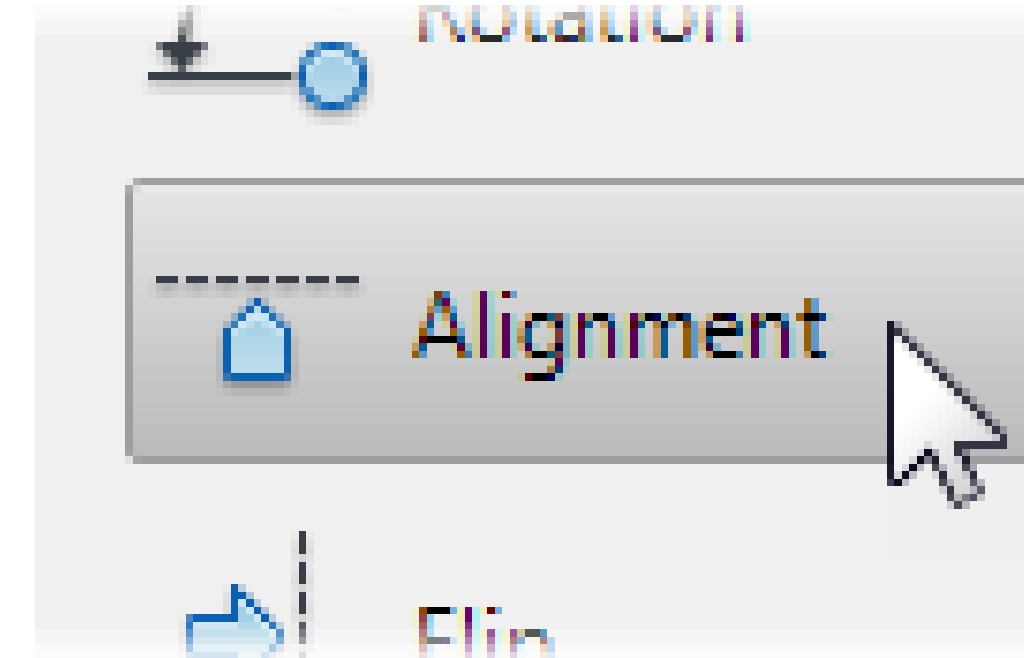
Insertion Points: Demonstration/Exercise

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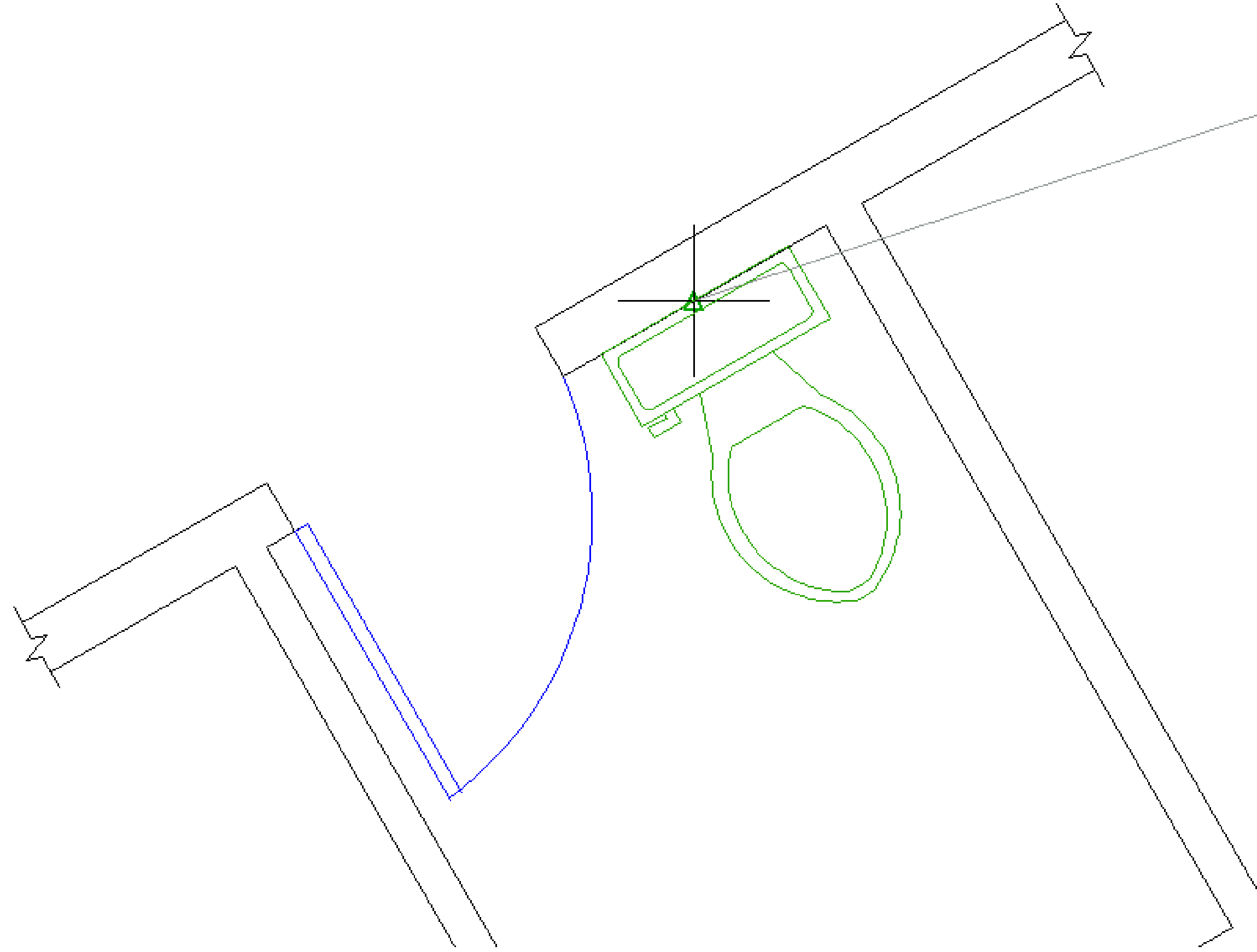
Create an Alignment Grip

- Use the Alignment Parameter
- No Action Necessary



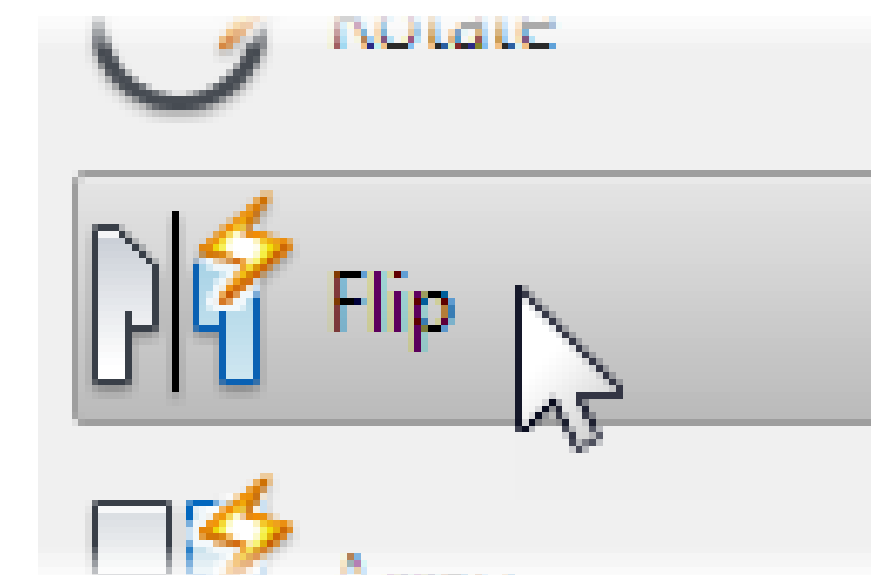
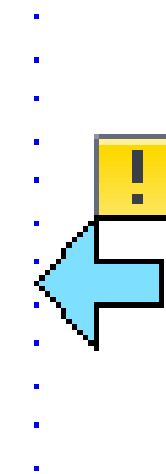
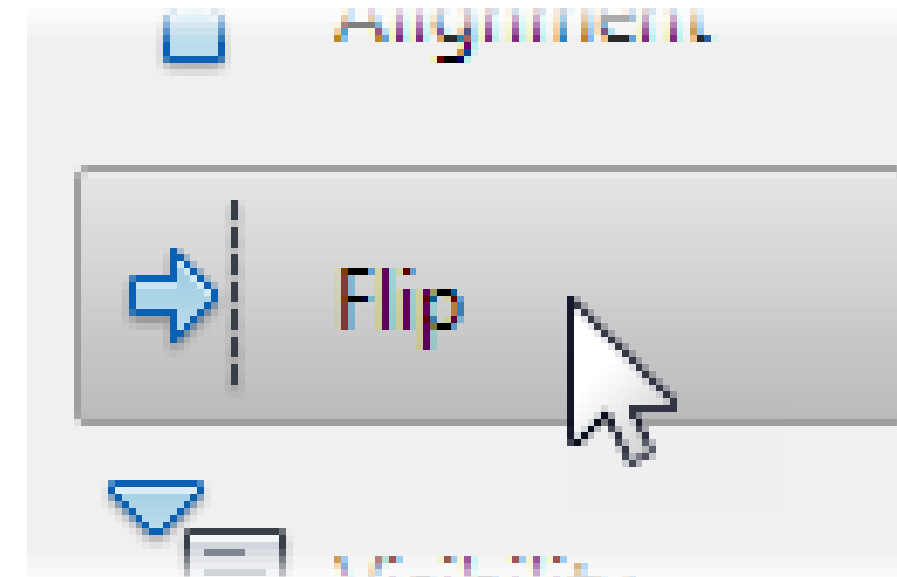
Alignment Grip: Demonstration/Exercise

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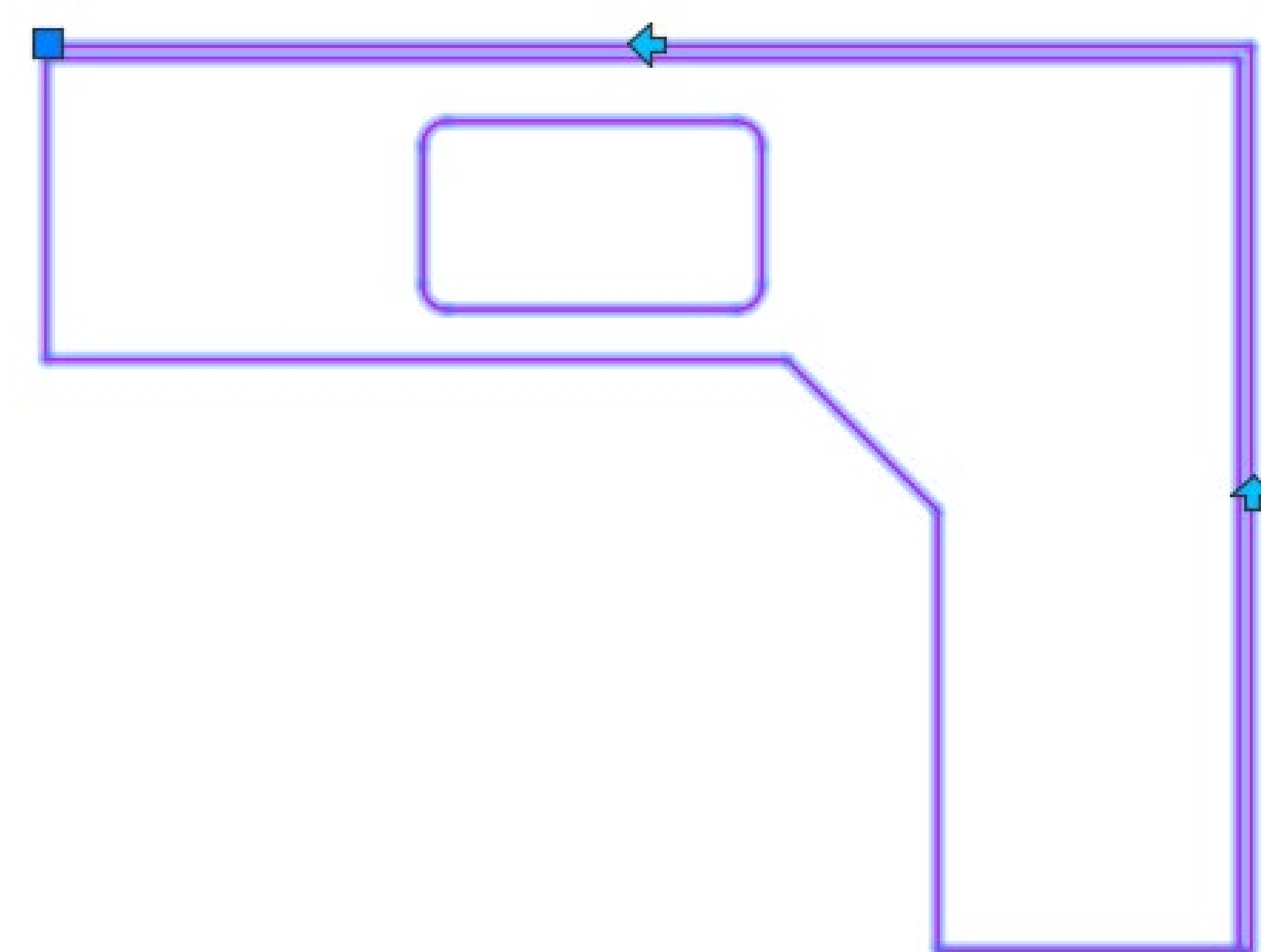
Create a Flip Grip

- Use the Flip Parameter
- Exclamation = Action Needed



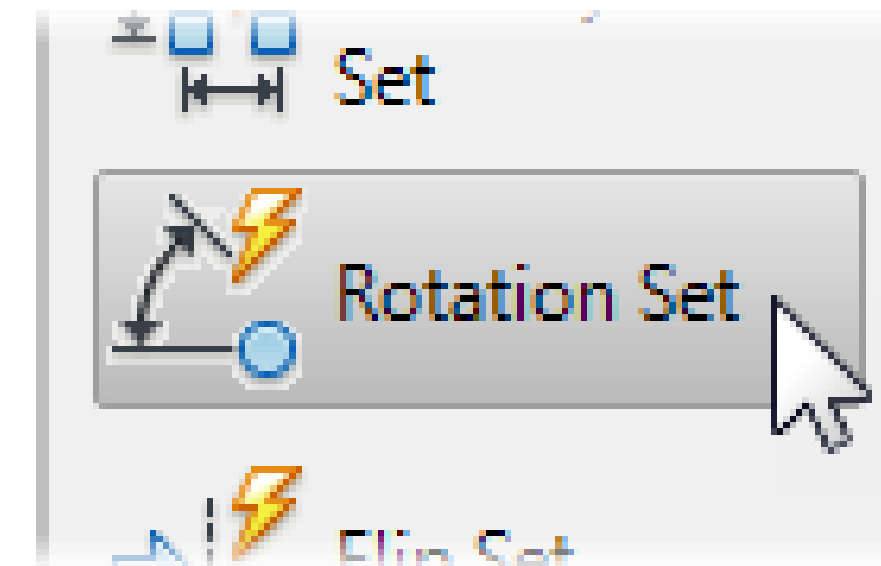
Flip Grip: Demonstration/Exercise

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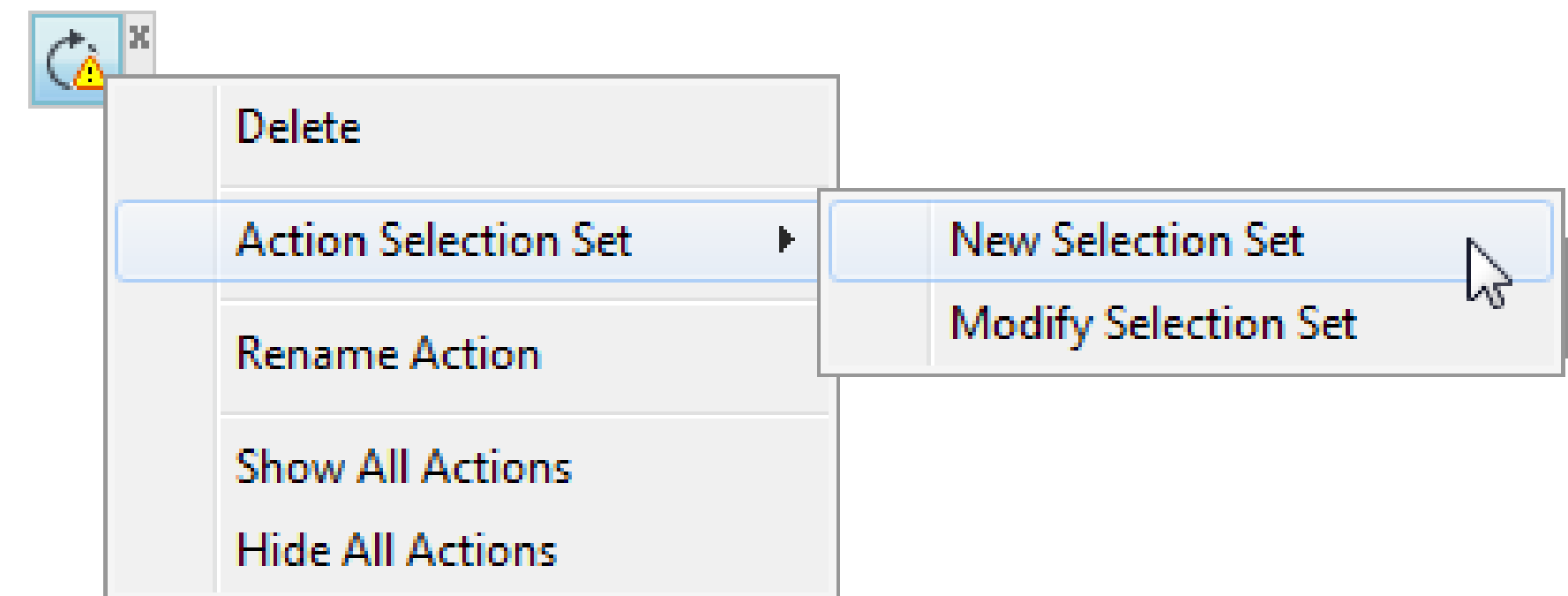


Adding the Rotation Action

- Use the Rotation Set to save steps

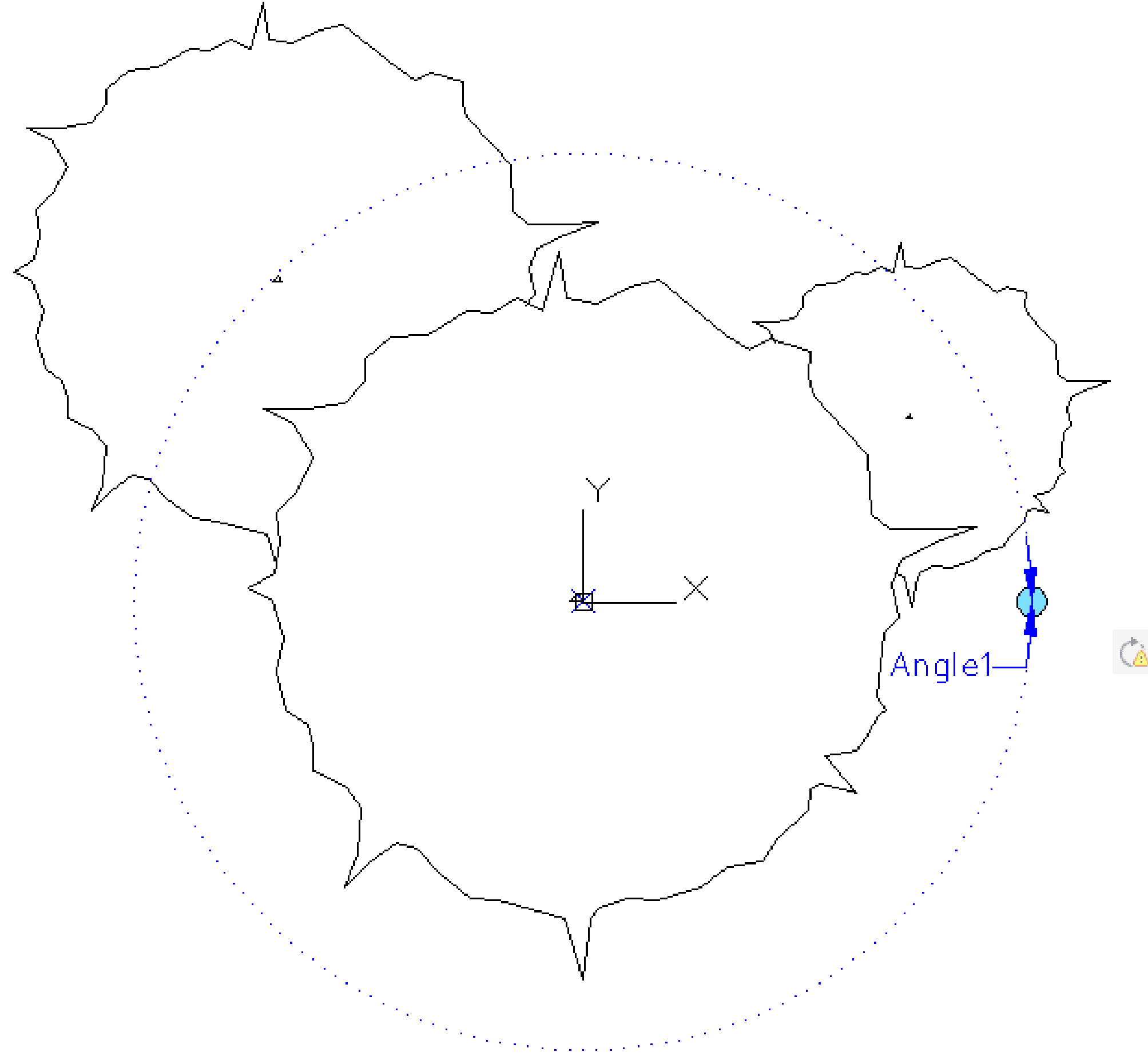


- Add a Selection Set to the Action



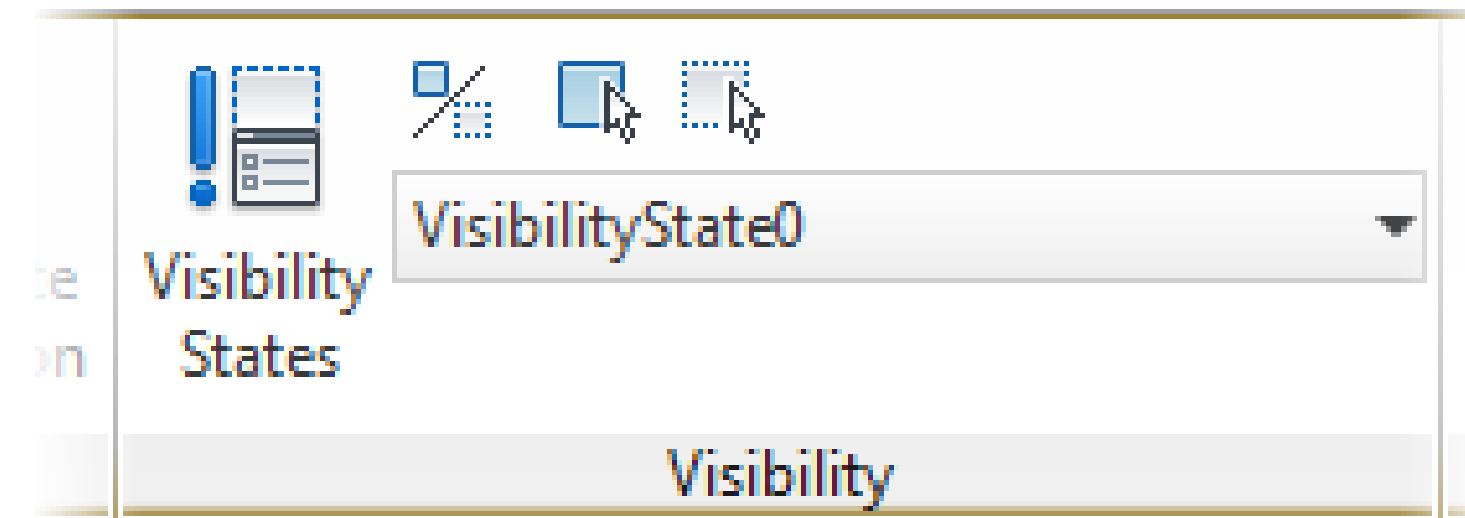
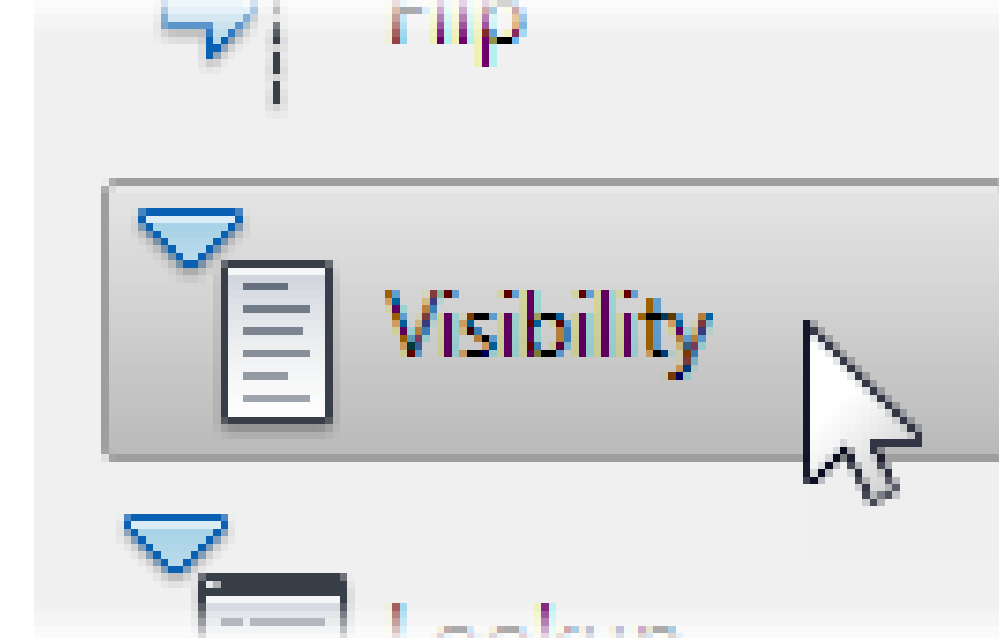
Rotation Set: Demonstration/Exercise

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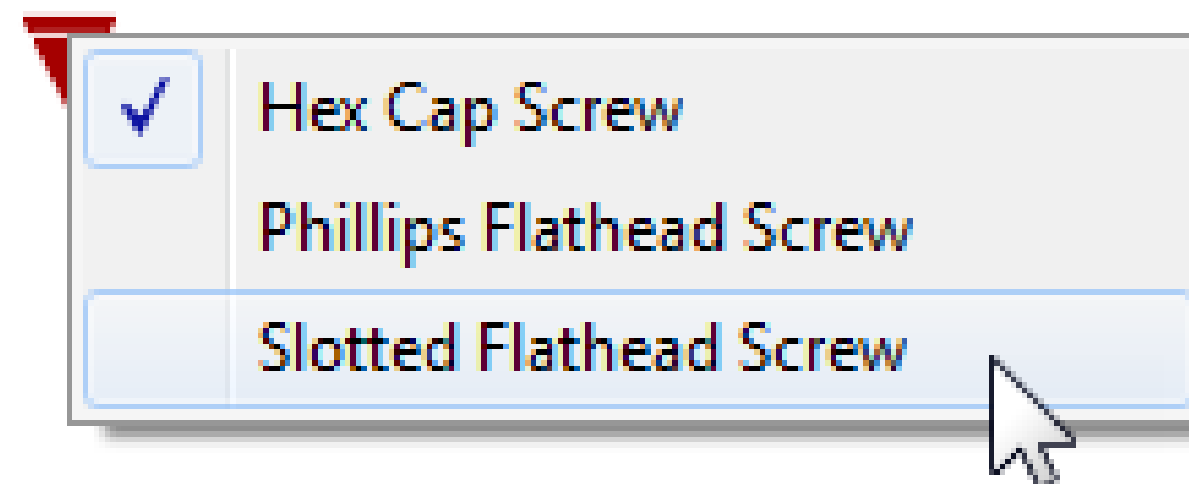
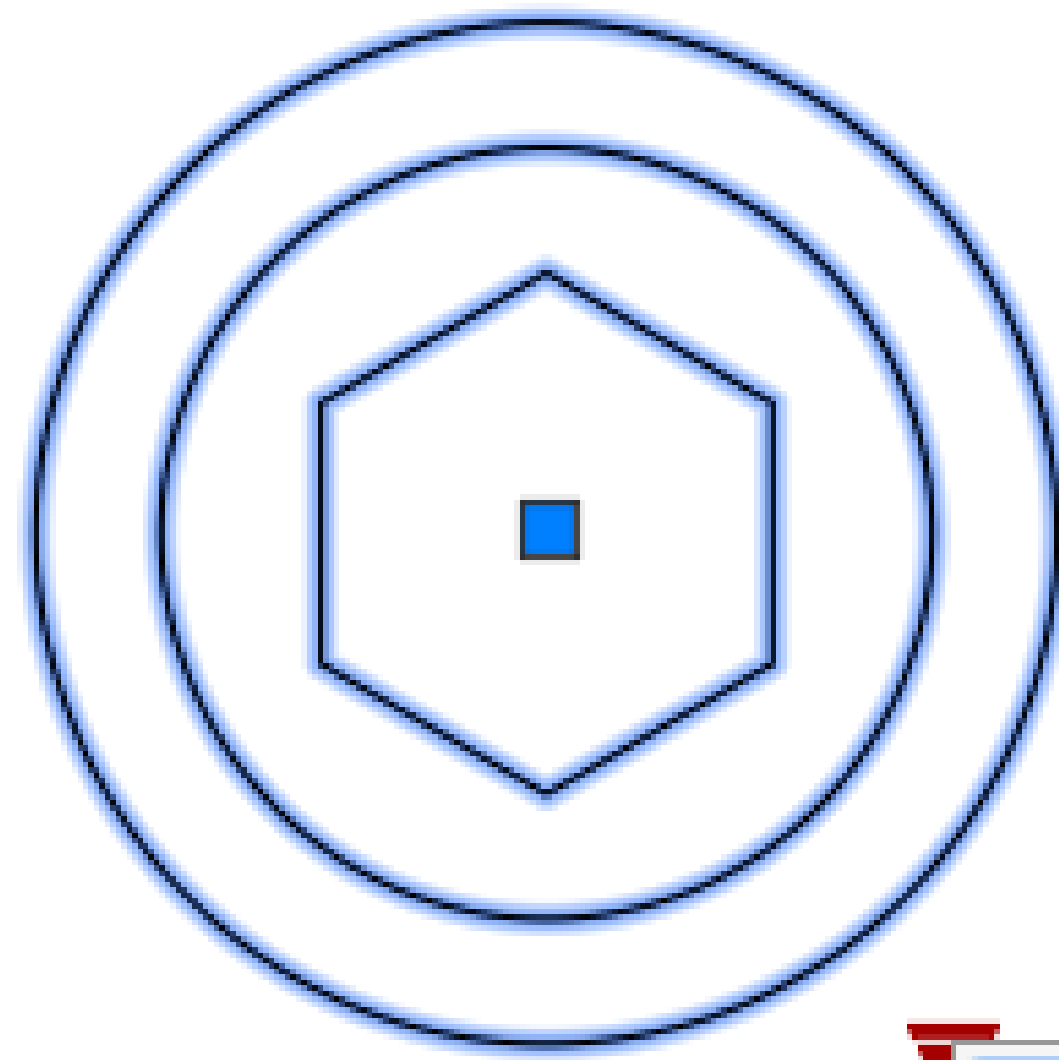
Adding the Visibility Grip

- Use the Visibility Parameter
- Use the Visibility Panel
- Create new states while



Visibility: Demonstration/Exercise

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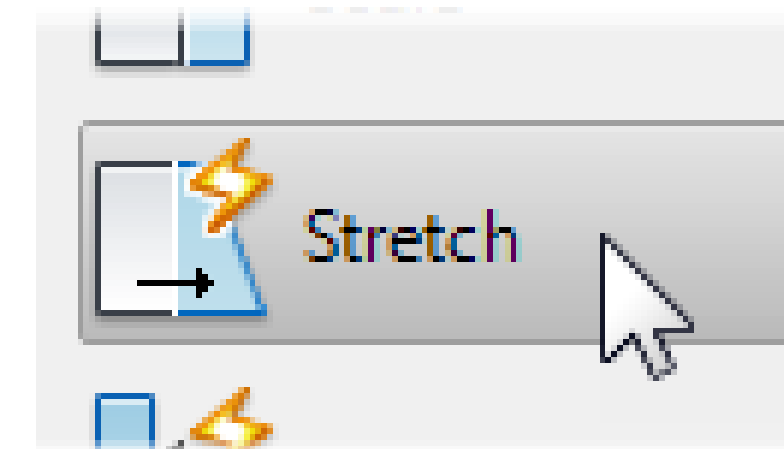
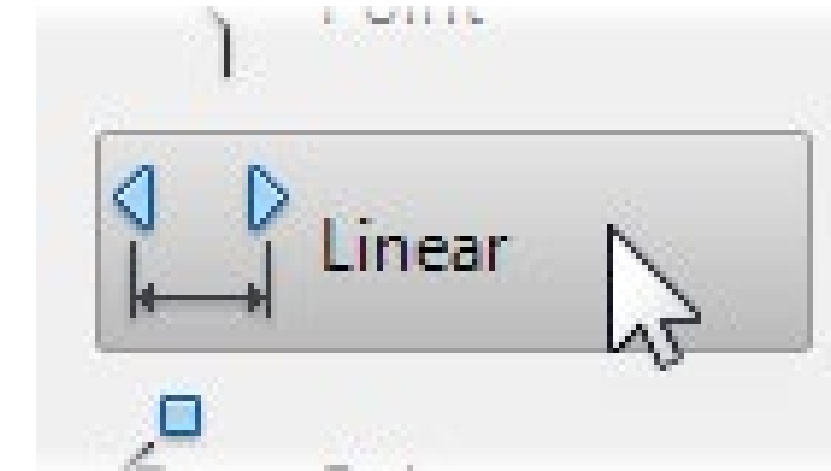


Limit block variations through lists,
increments, block tables, and lookup
actions

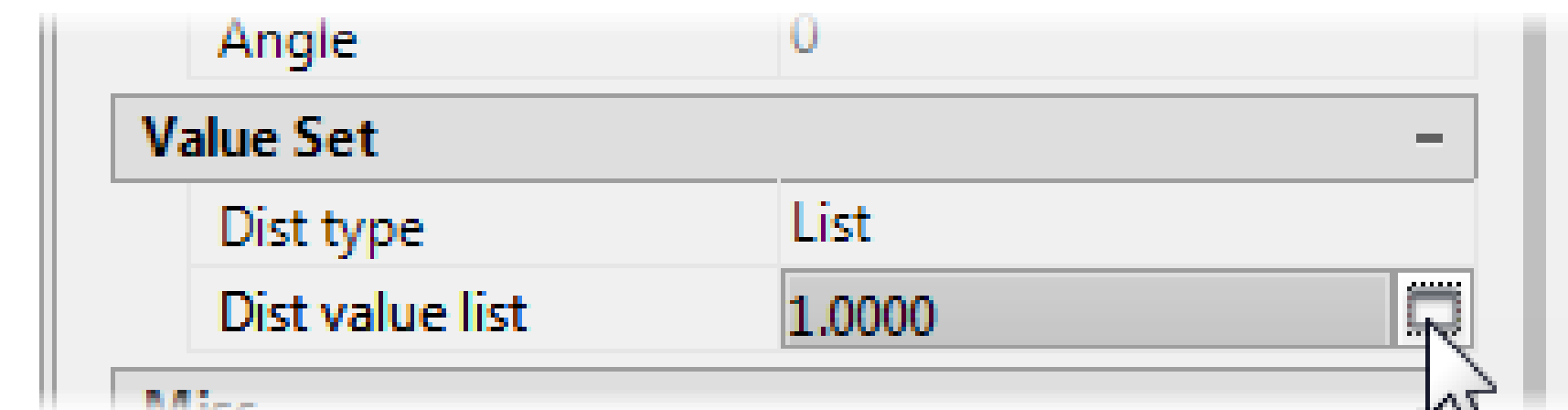


Adding the Stretch Action and Limiting with Lists

- Use the Linear Parameter



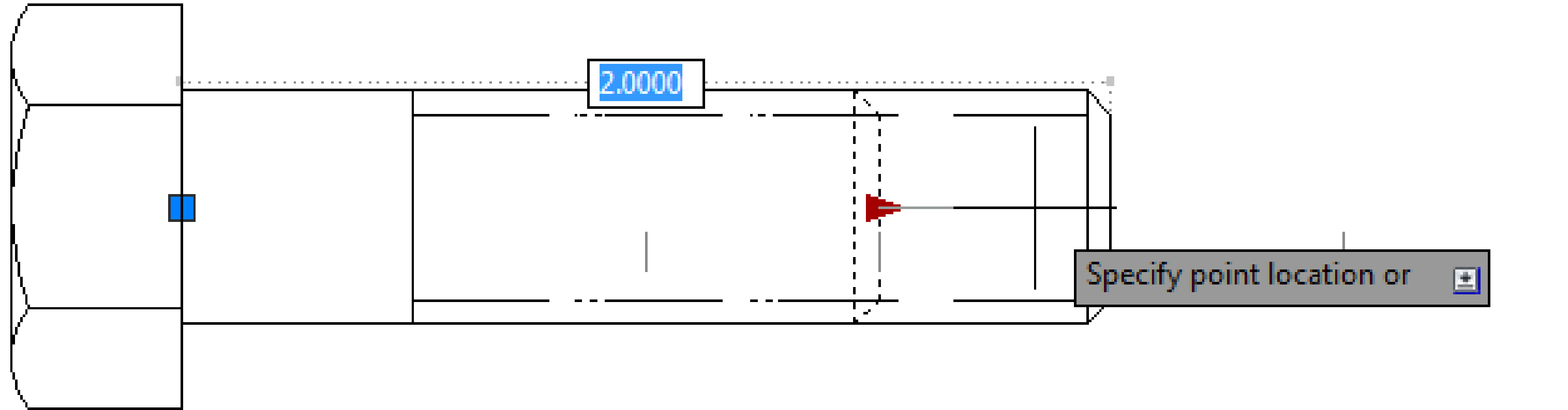
- Use the Stretch Action



- Use Properties to

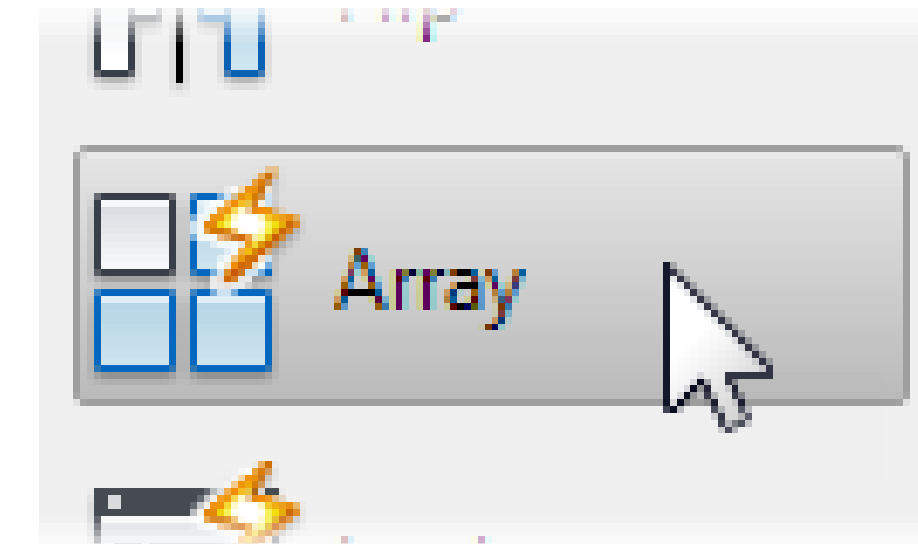
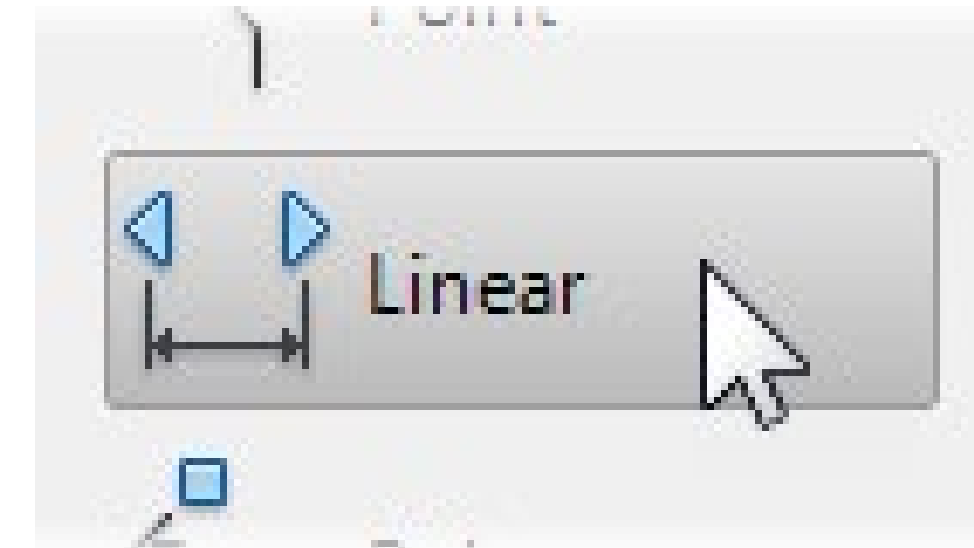
Stretch/List: Demonstration/Exercise


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Adding the Array Action and Limiting with Increments

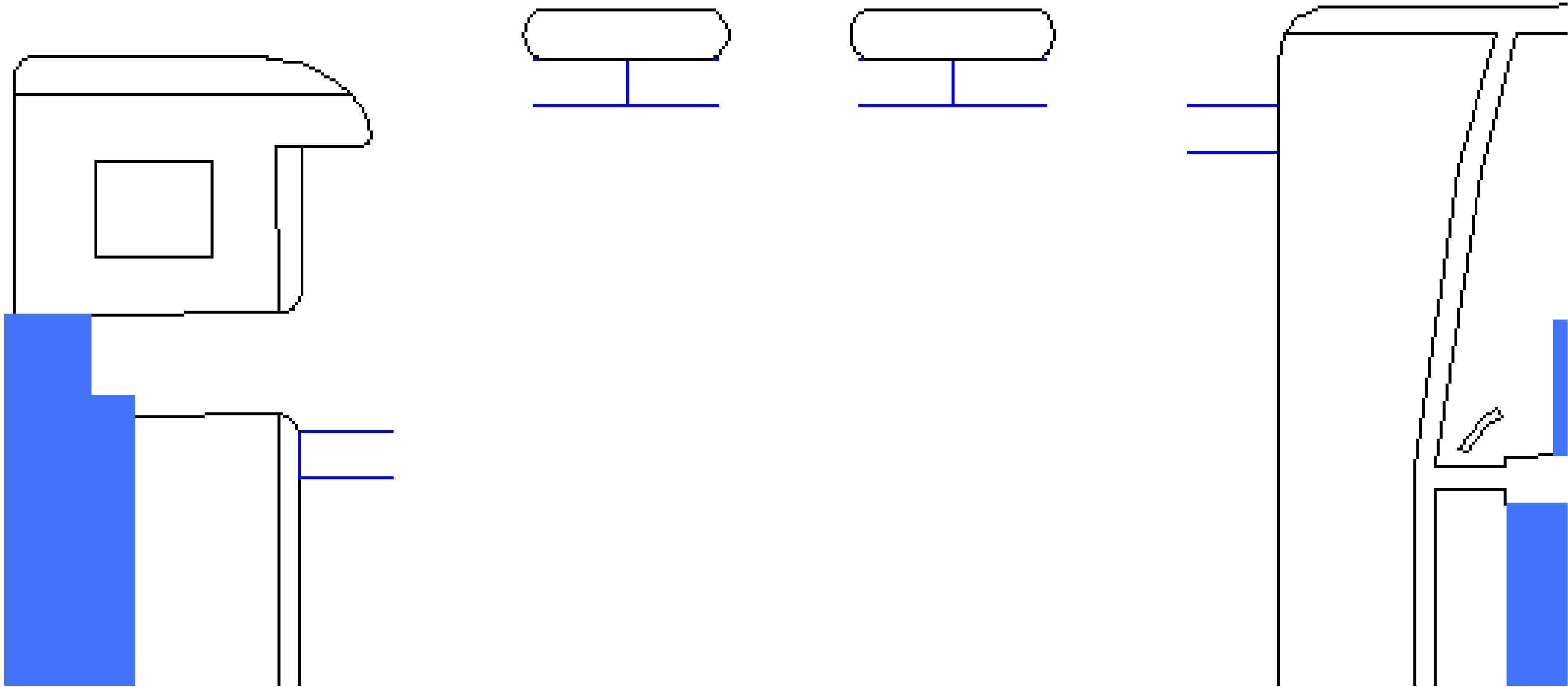
- Use the Linear Parameter
- Use the Array Action
- Use the Increment



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

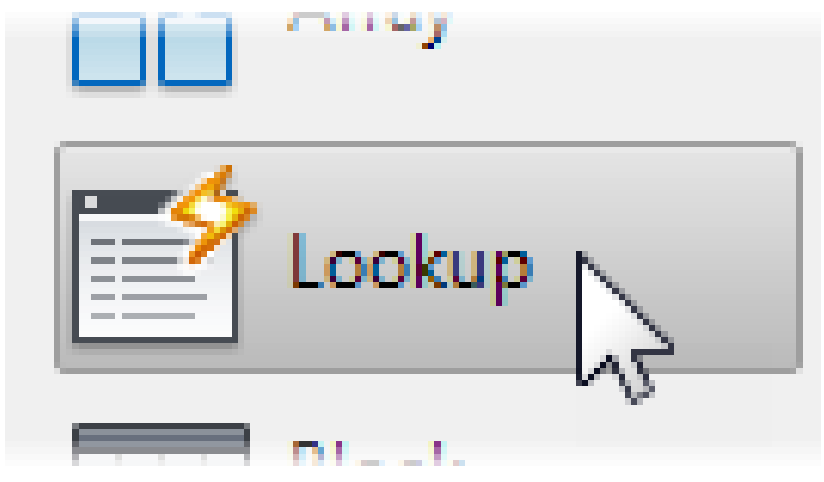
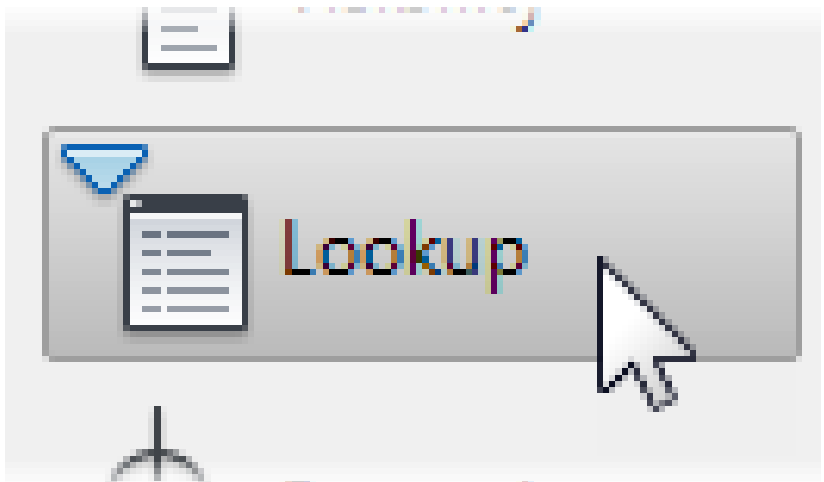
Array/Increment: Demonstration/Exercise

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Adding the Lookup Action

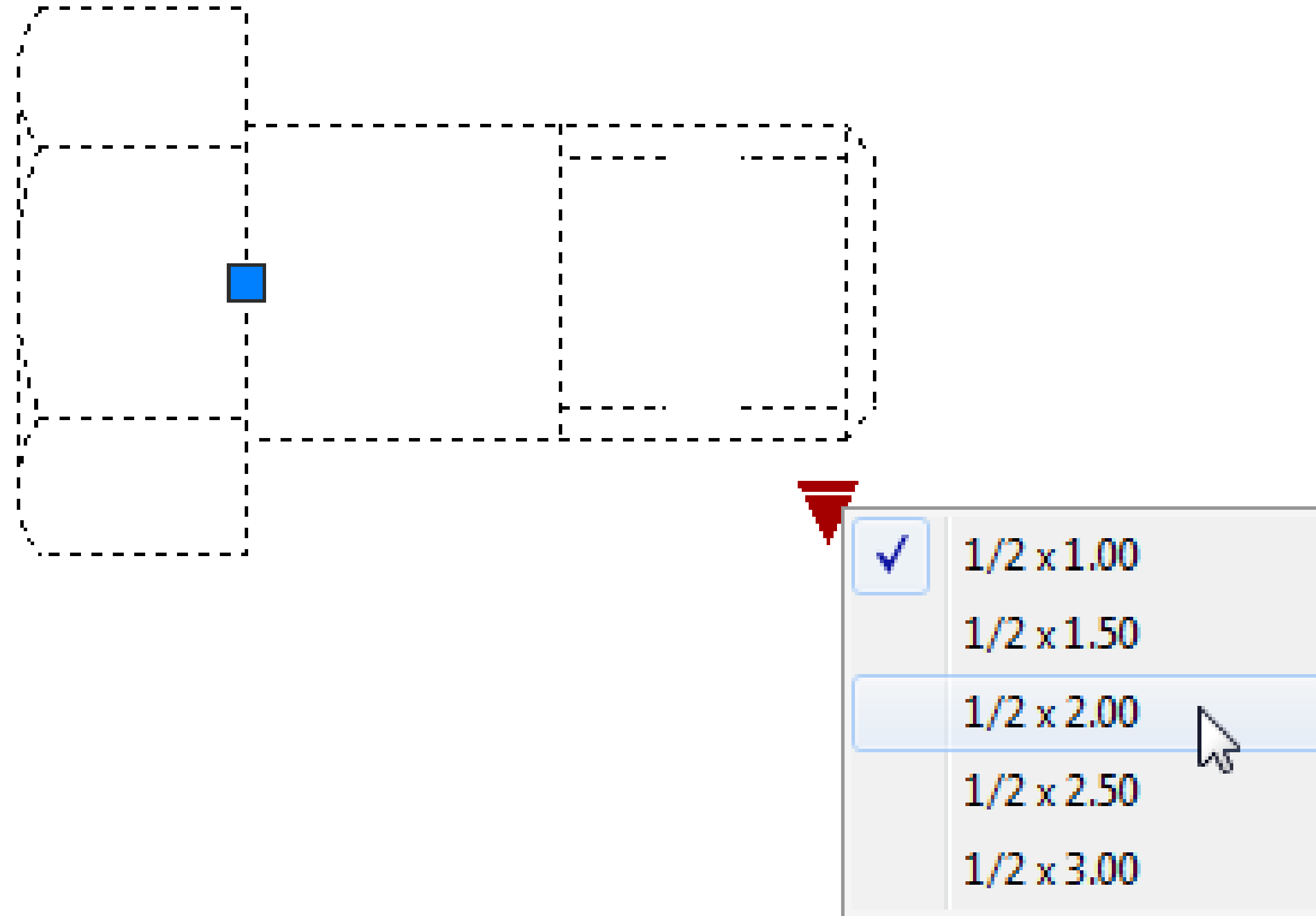
- Use the Lookup Parameter
- Use the Lookup Action
- Create a list of Lookup



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/Exercise

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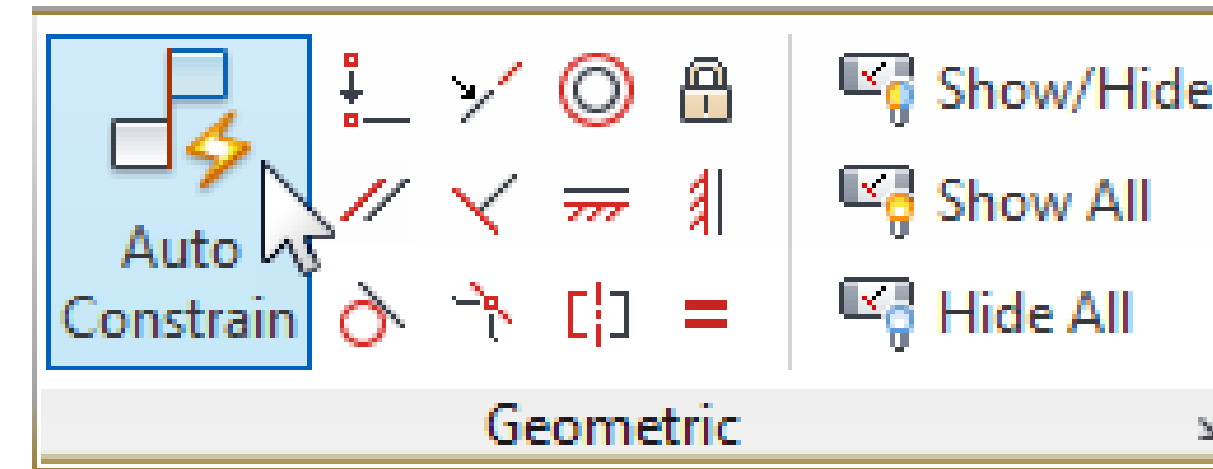


Apply constraints and parameters to
control block behavior

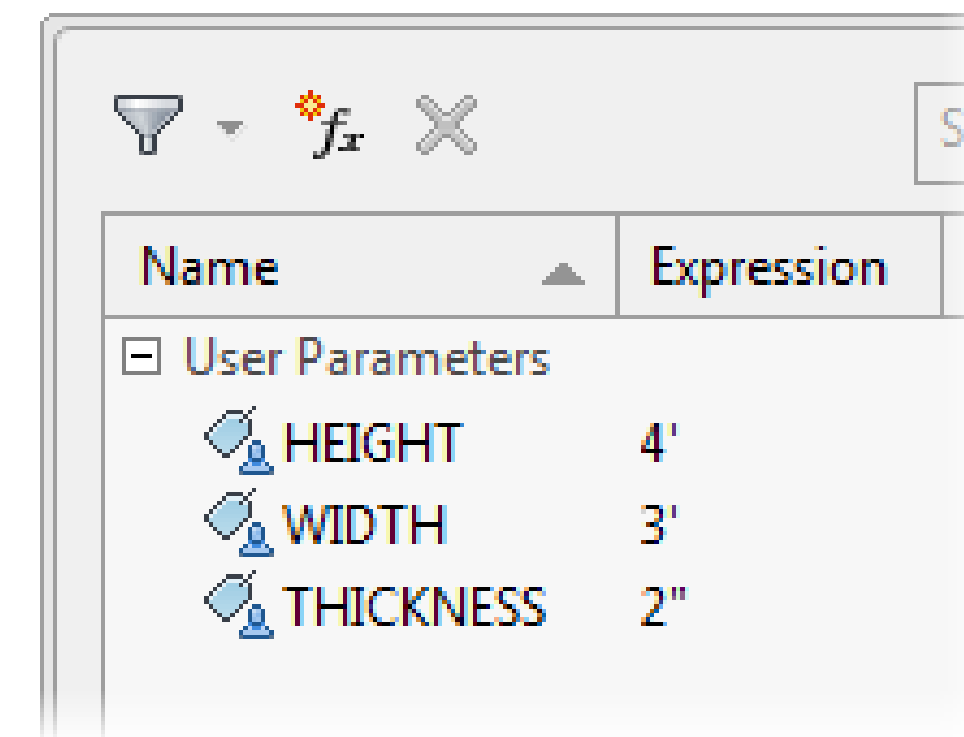


Using Parameters

- Constrain Geometry



- Create Named Parameters



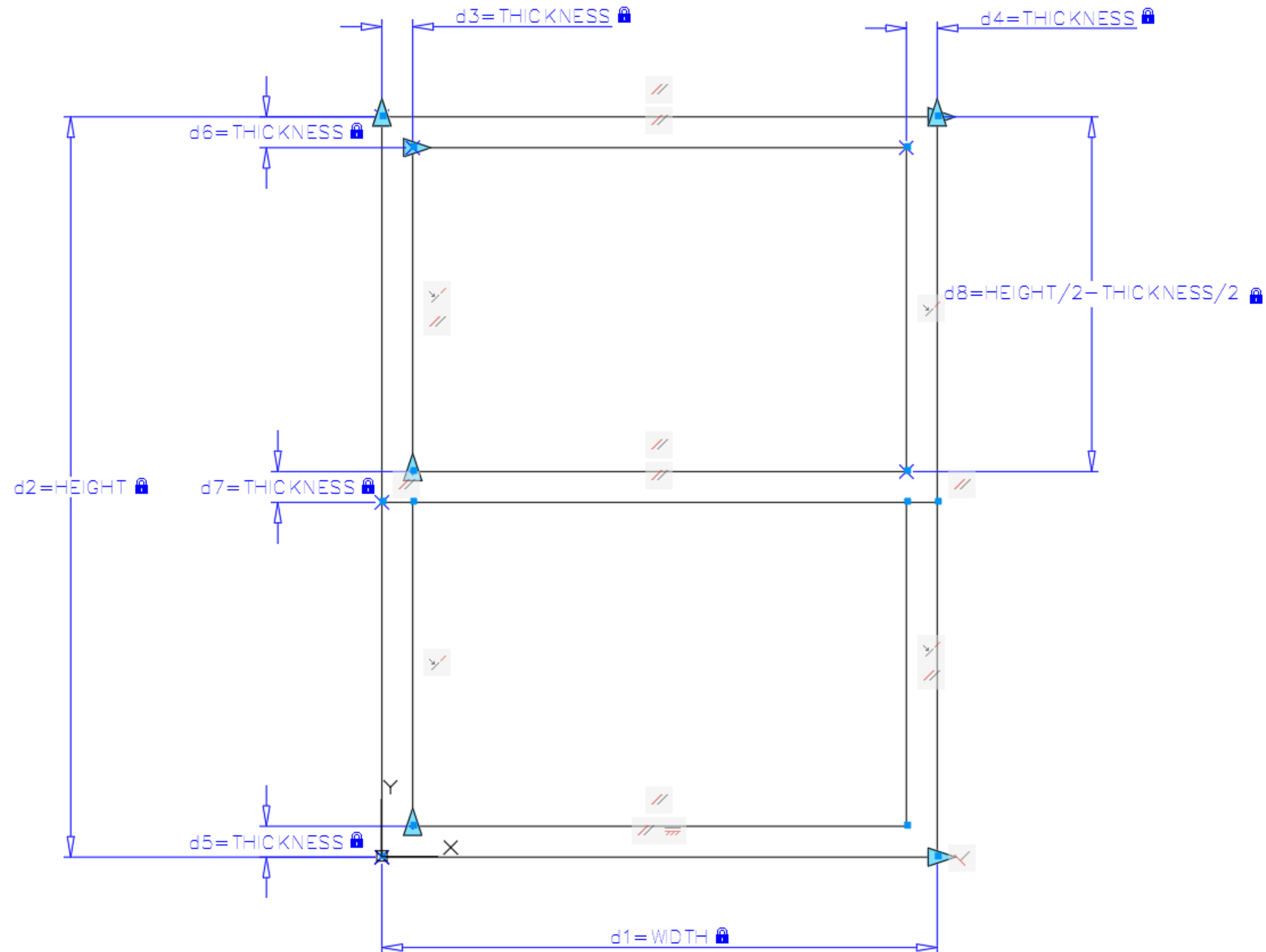
- Create a block table to

A screenshot of the 'Block Properties Table' in AutoCAD. The table has two columns: 'WIDTH' and 'HEIGHT'. It contains six rows of data, each with a width value and a height value.

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/Exercise

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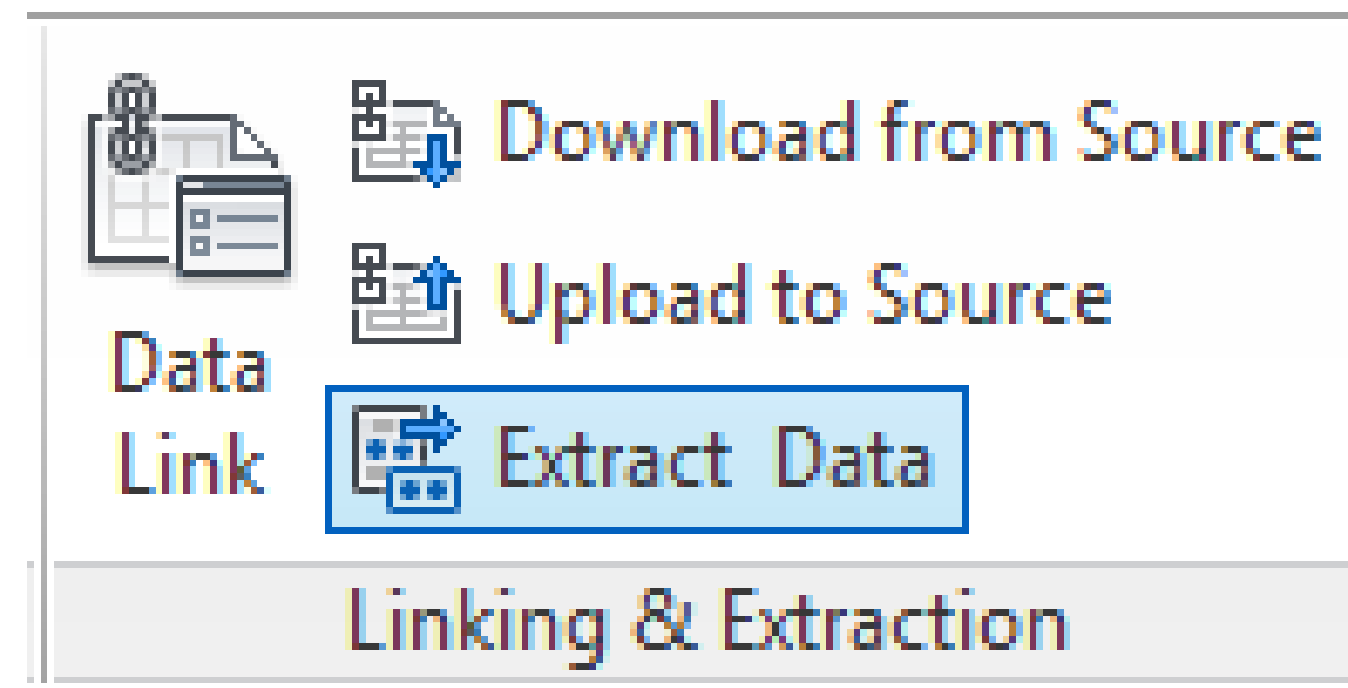


Extract dynamic block properties to AutoCAD tables and Excel spreadsheets

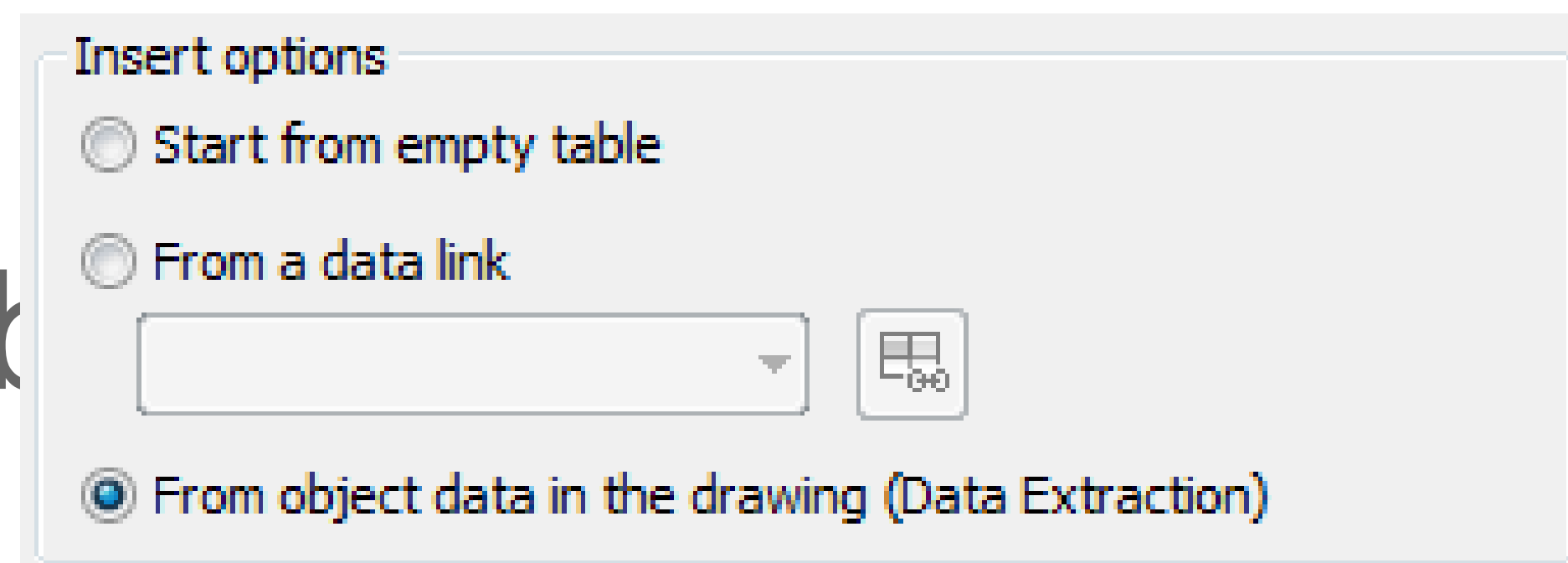


Extracting Data

- Insert >> Linking & Extraction >> Extract Data



- Insert Table



Extracting Data: Demonstration/Exercise

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Door Schedule				
MARK	TYPE	WIDTH	HEIGHT	MFG
100	Single-Flush	3'-4"	7'-0"	Jeld Wen
101	Single-Flush	2'-8"	7'-0"	Jeld Wen
102	Single-Flush	2'-8"	6'-8"	AMC
103	Single-Flush	2'-6"	6'-8"	Jeld Wen
104	Single-Flush	2'-6"	6'-8"	Jeld Wen

Conclusion

- Now it's your turn! Take these skills back to work and improve your productivity!
- Questions?
 - @tracy_chadwick



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